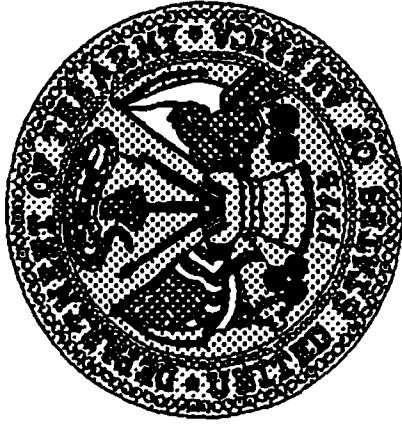


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Supporting Data FY 1996 / FY 1997 Biennial Budget Estimate
Submitted to Congress - February 1995

DESCRIPTIVE SUMMARIES OF THE



**RESEARCH, DEVELOPMENT, TEST AND EVALUATION,
Army Appropriation, Budget Activities 4 and 5**

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT)

"READINESS THROUGH MODERNIZATION"

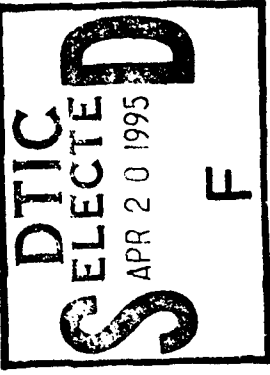
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DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS
OF THE
RESEARCH, DEVELOPMENT, TEST AND
EVALUATION, ARMY
FY 1996/FY 1997

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VOLUME II

Budget Activities 4 and 5

Department of the Army
Office of the Assistant Secretary of the Army (Financial Management)

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FY 1996/1997 RDT&E, ARMY PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

INTRODUCTION AND EXPLANATION OF CONTENTS

1. **General.** This section has been prepared for the purpose of providing information concerning the U.S. Army Research, Development, Test and Evaluation program. The Descriptive Summaries provide narrative information on all RDT&E, A program elements and projects. Because of new and expanded formats, this document now consists of three volumes. A brief explanation of the new formats is provided in paragraph 6 at the end of this section.
 2. **Relationship of FY 1996 Budget Submission to the FY 1995 Budget submitted to Congress.** This paragraph provides a list of program elements restructured, transitioned, or established to provide specific program identification.
- A. Program Element Restructures.** Explanation for these changes can be found in the narrative sections of the Program Element R-2 Exhibits.

OLD <u>PE/PROJECT</u>	<u>TITLE</u>	NEW <u>PE/PROJECT</u>
0203802/D685	ATACMS BLKII	0604768/D688
0602601/DC05	Tractor Card	0602601/DC83
0603012/DC24	STARLOS	0603238/D546
0603238/D182	STARLOS	0603238/D546
0603322/DB93	Tractor Cage	0603322/DB92
0603322/DBB1	Tractor Cage	0603322/DB92
0603005/D221	Non Ozone Depleting Substitutes Technology	0602601/AH82
0603730/D560	Tactical Surveillance System - Advance Development	0603766/D907

Program Restructures (Continued)

OLD <u>PE/PROJECT</u>	<u>TITLE</u>	NEW <u>PE/PROJECT</u>
0604740/D662	Tactical Surveillance System - Engineering Development	0604766/D909
0604741/D126	Air Defense Tactical Operations Center	0604741/D146
0604746/DL10	Electro-Optic (EO) Test Equipment	0604746/DL59
0604746/D537	Integrated Family of Test Equipment	0604746/DL59
0604804/DH01	Camouflage System Engineering Development	0604804/DL42
0605602/D453	Technical Test Instrumentation	0604759/D984
0605604/D089	Aircraft Certification	0605606/D092
0605801/MAC3	Ozone Depleting Chemical Elimination	0605854/M7PP
0605801/MAC4	Pollution Prevention	0605854/M8PP

Applicable portions of PE 0605856A, Environmental Compliance were restructured to new PEs for Environmental Conservation (PE 0605853A) and Pollution Prevention (PE 0605854A). Host Nation Compliance in PE 0605301A has been restructured to PE 0605856A and the new PEs, 0605853A and 0605854A.

Multiple projects within PE 0601102A, Defense Research Sciences, were restructured into new projects in PE 0601104A which has been renamed University/Industry Research Centers. These projects fund the federated Army Research Laboratory (ARL). The federated approach involves the creation of a distributed, multi-center external component of ARL, leveraging industry and academic laboratories nationally recognized for technical competence in areas essential to the Army.

Portions of PE 0605702A, 0605710A and 0605604A have been restructured into new projects in PE 0605604A to provide visibility for survivability/lethality projects as grouped by system categories.

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Program Restructures (Continued)

Funding from twenty-four Army RDT&E Chemical/Biological Defense projects spread throughout the seven Budget Activities were transferred to the Joint Chemical Biological Defense appropriation under Office of the Secretary of Defense management based on Congressional direction. These transfers are shown in the applicable project R-2 Exhibits.

B. Establishment of New Program Elements/Projects. There are no major system new starts. Minor new initiatives for FY 1996 are shown below with asterisks. The remaining programs listed are outyear initiatives beyond FY 1997.

TITLE

Improved Cargo Helicopter *
Army Missile Defense Systems Integration *
Advance Missile System, Heavy
Kiowa Warrior CSMET *
Aviation Combat Arms Tactical Trainer (AVCATT)
Engineer Combat Arms Tactical Trainer (ENCATT)
Fire Support Combat Arms Tactical Trainer (FSCATT)
Longbow-Apache TESS *
TROJAN Development (TIARA) *

PE/PROJECT

0203744/D430
0603308/D990
0604325/DE18
0604220/D538
0604780/D581
0604780/D582
0604780/D583
0604816/DC87
0604270/DL16

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C. FY 1996 Programs for which funding was shown in the FY 1995 President's Budget Submit (February 1994), but which are no longer funded.

<u>PE/PROJECT</u>	<u>TITLE</u>	<u>BRIEF EXPLANATION</u>
0305150/D914	Airborne Reconnaissance Low (ARL)	Program transferred to OSD.
0602786/A427	Tactical Shelter ED	Program completed.
0603001/D128	Test Measurement Tech Dev	Funding resumes in FY 1997.
0604604/DH07	Family of Medium Tactical Vehicles	Development program complete.
0603122/DB95	Tractor Hip	Program terminated.
0605805/D620	DoD Munitions Effects	Program transferred to OSD.
0605604/D235	Missile Counter/Countermeasure Tech	Program terminated.
0605810/DE65	NDI Testing	Efforts funded in system PEs.
0605810/D125	NDI Market Investigations	Efforts funded in system PEs.

3. Classified/Special Access Programs which are submitted offline through OSD are listed below.

0203744, Project DB75	0603018
0203806	0603019
0203808	0603020
0301359	0603238, Projects D182 and D189
0602104	0603322
0602122	0603647
0602601, Project DC83	0603851
0602788	0604018
0603003, Projects DB38 and D391	0604328
0603012	0603017
0603014	

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4. Program Element number 0603639A is classified SECRET and will be provided upon request.
5. **Classification.** This document no longer contains any classified data.
6. **New Formats.** The Department of Defense Financial Management Regulation 7000.14-R, dated May 1994 required the Services to prepare the RDT&E Descriptive Summaries in new formats which are described below. The change in formats increased the overall size of the publication which is now being provided in three volumes.

A. **RDT&E Budget Item Justification Sheet (R-2)** provides a resource summary table for all projects and the total Program Element. Paragraph A provides descriptions and justifications for the Program Element and for each Project; Paragraph B provides a Program Change Summary for the total Program Element which shows FY 1994-FY 1997 Previous President's Budget submit funding and the current FY 1994-FY 1997 President's Budget Submit. Note that the FY95 Appropriated value represents the Congressionally approved funding less the amounts decremented by the Congressional undistributed reductions, but before the Small Business Innovation Research/Small Business Technology Transfer tax has been applied. Additional R-2 Exhibits are provided for each project to show other related appropriation funding (Paragraph C) and schedule/milestone profiles (Paragraph D). Paragraphs C and D are not provided if there is no other related appropriation funding and if milestone schedules do not apply.

B. **Program Element/Project Cost Breakdown (R-3)** This Exhibit is prepared for each project in Budget Activities 4, 5 or 7 funded in FY 1995, FY 1996 or FY 1997. Those same projects which meet certain criteria will also show Paragraph B, Budget Acquisition and Planning Information. The criteria for requiring that this information be provided is at least one of the following: Major Defense Acquisition Program, funding revisions of greater than plus or minus 10 percent since the FY 1995 President's Budget request, major milestone schedule change of more than six months, or is a new start.

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10	0602308A	Modeling And Simulation	102
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28	0603002A Medical Advanced Technology	237
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32	0603006A Cmd, Cntrl And Comm Adv Technology	293
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT			
4 - Demonstration And Validation		0603308A Army Missile Defense Systems Integration								D990			
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D990 Theater Missile Defense (TMD) System Integration		0	0	2985	2985	2985	2986	2987	2983	Continuing	Continuing		

A. Mission Description and Budget Item Justification

Project D990 Theater Missile Defense (TMD) System Integration: Funds initiatives directed by U.S. Army Space and Strategic Defense Command in its capacity as the U.S. Army advocate, integrator, and focal point for TMD operations. USASDDC is empowered by the Department of the Army to serve as the Department level, operational representative for theater missile defense. This program conducts systems analysis, studies, and experimentation designed to validate and integrate the pillars of TMD: active defense, passive defense, attack operations, and battle management/command, control, communications, computers, and intelligence functions. This integration program produces hardware and software solutions, doctrinal and procedural solutions, interfaces, and architectures; these inter-pillar and intra-pillar products, required to accomplish the integrated TMD mission, exceed the scope of other programs. This program supports the milestone decisions for active defense missile and C4I systems, as well as Aviation and Artillery. This Project focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of TMD and is appropriately funded in Budget Activity 4.

FY 1994 Accomplishments:

- There were no projects for TMD Systems Integration funded in FY94.

FY 1995 Planned Program:

- There were no projects for TMD Systems Integration funded in FY 95.

FY 1996 Planned Program:

- Advance development for an Army theater-level TMD command post designed to perform the battle integration function of TMD (1485).
- Participation in the Joint TMD Experiments and exercises designed to validate and test prototype products identified in the TMD ORD (500).
- Evaluation of the interoperability of existing models and simulations (200).
- Validation of TMD power projection requirements (200).
- Analysis of proposals to construct an Army TMD operator training facility (150).
- Concept development for Defense Support Program TMD options (100).
- Concept development of space applications for integrated TMD (100).
- Simulations and models to validate integrated TMD requirements (100).
- Initiatives to market Army TMD developments (150).

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT
D990

4 - Demonstration And Validation

0603308A Army Missile Defense Systems

Integration

FY 1997 Planned Program:

- Testing and exercising prototypical hardware and software related to integrated TMD operations, especially TMD command post/cell operations, inter-service operations, combined operations with allies, intra-pillar functions (1985).
- Development of enhanced models and simulations (500).
- Leverage Department-level studies/initiatives to provide solutions to TMD integration issues (200).
- Concept development of space applications for integrated TMD (100).
- Upgrades to simulations and models reflecting the Joint TMD environment (100).
- Initiatives to market Army TMD developments (100).

B. Program Change Summary

	FY 1994	FY 1995	FY 1996	FY 1997
Previous President's Budget	0	0	0	0
Appropriated Value	0	0	0	0
Adjustments to Appropriated Value	0	0	0	0
Current Budget Estimate Submission (BES)	0	0	2985	2985

Change Summary Explanation (by Project): N/A

Change Summary Explanation: N/A

Funding: N/A

Schedule: N/A

Technical: N/A

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BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603308A Army Missile Defense Systems Integration								D990	
<p>C. Other Program Funding Summary There are no other related RDTE appropriation efforts.</p>											
<p>D. Schedule Profile These efforts are continuous in nature; therefore, no milestone or events are provided.</p>											
		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
										Compl	Cost
1	2	3	4	1	2	3	4	1	2	3	4
		FY 1994			FY 1995		FY 1996		FY 1997		

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BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603308A Army Missile Defense Systems

PROJECT

D990

Integration

A. Project Cost Breakdown

Program Management Support

FY 1994

0

0

FY 1995

0

0

FY 1996

2985

2985

FY 1997

2985

2985

B. Budget Acquisition History and Planning Information: N/A

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
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BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603619A Landmine Warfare & Barrier Advanced Development

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21148	23562	32639	17044	10004	7983	9608	11673	Continuing	Continuing
D005 Landmine Advanced Development	5162	0	0	0	2089	2388	2388	0	Continuing	Continuing
D008 Countermine/Barrier Advanced Development	15986	23562	32639	17044	7915	5575	7211	11673	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element provides for advanced development of new mine and countermine systems by prototyping modern munitions technology, advanced development sensors, logic networks, fuzes, power sources, warhead components and modules into complete systems. Development of minefield command and control equipment will provide new capabilities in landmine warfare and will move the future Army toward the intelligent minefield. It provides for initiation of advanced development of the Airborne Stand-off Minefield Detection System (ASTAMIDS), the Close-in Man Portable Mine Detector, Vehicle Mounted Mine Detector (VMMD) and for mine neutralization with Explosive Stand-off Minefield Breacher (SMB), and Anti-personnel Obstacle Breaching System (APOBS).

Project D005 - Landmine Advanced Development: Program to improve the capability of mines used by U.S. Army. This project will provide command and control and on-off-on capabilities for mines.

FY 1994 Accomplishments:

- Conducted component level tests for Wide Area Mine (WAM) Command & Control (1162)
- Set power budget & established intermine communications link for WAM Command and Control (3000)
- Developed Engineering and Manufacturing Development (EMD) plan for WAM Command & Control (1000)

FY 1995 Planned Program: Project not funded in FY 1995

FY 1996 Planned Program: Project not funded in FY 1996

FY 1997 Planned Program: Project not funded in FY 1997

Acquisition Strategy: Command and Control is being developed as a product improvement to Wide Area Mine and will be incorporated into the production design for WAM PIP.

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PE NUMBER AND TITLE

4 - Demonstration And Validation

0603619A Landmine Warfare & Barrier Advanced Development

(U) **Project D606 - Countermine/Barrier Advanced Development:** This project provides for advanced development of new countermine systems by prototyping advanced sensors evaluation, neutralizing, clearing, breaching and detection concepts which will enhance the U.S. capability in countermine warfare. The program includes the Airborne Stand-off Minefield Detection System (ASTAMIDS), the Close-in Man Portable Mine Detector, Vehicle Mounted Mine Detector (VMMD), Explosive Stand-off Minefield Breacher (SMB), and Anti-personnel Obstacle Breaching System (APOBS). The program provides for proof-of-principle for these systems.

FY 1994 Accomplishments:

- Completed ASTAMIDS system design and conduct review (7500)
- Initiated, developed detailed design & fabrication of ASTAMIDS prototype (7121)
- Conducted Explosive SMB Milestone I IPR and released contract solicitation (365)
- Conducted APOBS Reliability Improvement Program (1000)

FY 1995 Planned Program:

- Conduct APOBS Milestone III IPR (200)
- Complete ASTAMIDS detail hardware design (10300)
- Continue ASTAMIDS prototype development (11575)
- ASTAMIDS test planning & site preparation (1000)
- SBIR/STTR (487)

FY 1996 Planned Program:

- Conduct system design & preliminary design reviews for Explosive SMB (10169)
- Initiate Advanced Development design for Close-in Manportable Mine Detector (7087)
- Complete ASTAMIDS development/fabrication of prototype (11283)
- Initiate/complete development and early user tests of ASTAMIDS (4300)

FY 1997 Planned Program:

- Complete technical test & evaluation for Explosive SMB (9052)
- Conduct Milestone II IPR for Explosive SMB (750)
- Develop Close-in Manportable Mine Detector Prototype (7242)

Acquisition Strategy: Close-in Man Portable Mine Detector - RDTE development with sole source production award to RDTE contractor.

ASTAMIDS - RDTE development with sole source production award to RDTE contractor.

SMB - RDTE development with sole source production award to RDTE contractor.

DE Breacher - RDTE development with sole source production award to RDTE contractor.

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BUDGET ACTIVITY		PE NUMBER AND TITLE	
4 - Demonstration And Validation		0603619A Landmine Warfare & Barrier Advanced Development	
B. Program Change Summary			
Previous President's Budget	FY 1994	FY 1995	FY 1996
Appropriated Value	21609	27126	15762
Adjustments to Appropriated Value	461	23562	
a. SBIR/STTR decrements (330)			
b. Reprogramming out of PE (131)			
Current Budget Submit/President's Budget	21148	23562	32839
			17044

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BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603619A Landmine Warfare & Barrier Advanced Development

PROJECT

D005

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D005 Landmine Advanced Development	5182	0	0	0	2089	2388	2388	0	Continuing	Continuing

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, A Budget Activity 5										
PE 0604808 Project D016 Mine Engring. Dev.	2912	6757	5392	5694						
AMMO, A Appropriation			15000	20000	20000	35000	35000	35000		
E78100, Wide Area Mine										

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997	
Conduct component level tests for WAM C2	1 2 3	4 X*	1 2	3	4 1	2 2	3 4	1 2	3 4	
Set Power Budget and establish intermine communications link for WAM C2		X*								
Develop EMD Plan for WAM C2		X*								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995																								
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																									
4 - Demonstration And Validation	0603619A Landmine Warfare & Barrier Advanced Development	D005																									
<p>A. Project Cost Breakdown</p> <table> <tr> <td>FY 1994</td> <td>FY 1995</td> <td>FY 1996</td> <td>FY 1997</td> </tr> <tr> <td>4467</td> <td></td> <td></td> <td></td> </tr> <tr> <td>0</td> <td></td> <td></td> <td></td> </tr> <tr> <td>500</td> <td></td> <td></td> <td></td> </tr> <tr> <td>195</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5162</td> <td></td> <td></td> <td></td> </tr> </table> <p>Primary Hardware Development Test and Evaluation Govt Engineering Spt Program Management Total</p> <p>B. Budget Acquisition History and Planning Information: N/A</p>				FY 1994	FY 1995	FY 1996	FY 1997	4467				0				500				195				5162			
FY 1994	FY 1995	FY 1996	FY 1997																								
4467																											
0																											
500																											
195																											
5162																											

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603619A Landmine Warfare & Barrier Advanced

D606

Development

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D606 Countermine/Barrier Advanced Development	15066	23502	32639	17044	7915	5575	7211	11673	Continuing	Continuing

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, A Budget Activity 3										
PE 0604808 Project D415 Mine Neutralization	0	932	1990	14735	20399	38020	20884	17958		114918
Detection										
OPA 3, A Appropriation										
M80100, Initial VMMD										
S11500, ASTAMIDS				6755	9942	6667	11989	11991		23364
R68200, Close-in Manportable Detection								6822		23980
R68000, Standoff Hand Held Detector						3977	3977			6822
M79900, Mine Countermeasures, Electronic								13672		7954
										13672

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
Complete ASTAMIDS system design and conduct review	1	2	3	4	1	2	3	4	1
Initiate, develop detail design and fabrication of ASTAMIDS prototype									
Conduct explosive SMB milestone I IPR & Release contract solicitation									
Conduct APOBS reliability Improvement Program									
Conduct APOBS Milestone III IPR									

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PE NUMBER AND TITLE

0603619A Landmine Warfare & Barrier Advanced
Development

PROJECT

D606

4 - Demonstration And Validation

D. Schedule Profile (continued):

	FY 1994		FY 1995		FY 1996		FY 1997	
	1	2	3	4	1	2	3	4
Continue ASTAMIDS prototype development								
ASTAMIDS test planning and site preparation								
Conduct system design & preliminary design reviews for explosive SMB								
Initiate advanced development design for Close-In Man Portable Mine Detector								
Complete ASTAMIDS development/fabrication of prototype								
Initiate early user tests of ASTAMIDS								
Complete technical test & evaluation and conduct Milestone II IPR for Explosive SMB								
Conduct final design review and initiate technical/operational test & evaluation of DE Breacher								
Develop close-in Man Portable Mine Detector Prototype								

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PROJECT

4 - Demonstration And Validation

0603619A Landmine Warfare & Barrier Advanced Development

D606

A. Project Cost Breakdown

Primary Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997
Test and Evaluation	11066	18924	23295	9892
Govt Engineering	45	675	2300	4050
Govt Program Management	4151	2745	6644	2502
Miscellaneous - SBIR/STTR (FY 95)	724	731	600	600
Total	0	487	0	0
	15986	23562	32839	17044

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Westinghouse	CPIF	9308	20111	20111	1520	4729	8000	5362	0	19611	
Raytheon	CPIF	9308	23475	23475	1520	6337	10924	4194	0	22975	
TBD	CPIF	TBD	N/A	N/A	N/A	0	0	8377	4133	12510	
TBD	CPIF	TBD	N/A	N/A	N/A	0	0	5362	5759	11121	
Support and Management Organizations											
CECOM	1095	Various	N/A	N/A	N/A	4875	3476	7244	3102	18697	
Test and Evaluation Organizations											
TECOM	1095	Various	N/A	N/A	N/A	45	675	2300	4050	7070	
Miscellaneous	SBIR/STTR	(FY 95)	N/A	N/A	N/A	0	487	0	0	487	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT			
4 - Demonstration And Validation		0603619A Landmine Warfare & Barrier Advanced Development			D606			
		Total						
		Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
			FY 1994					Program
	Subtotal Product Development		3040	11066	18924	23295	9892	66217
	Subtotal Support and Management			4875	3476	7244	3102	18697
	Subtotal Test and Evaluation			45	675	2300	4050	7070
	Subtotal Miscellaneous				487			
	Total Project		3040	15986	23562	32839	17044	92471

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603627A Smoke, Obscurant & Target Defeating

Systems - AD

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	5088	2789	3248	6567	5782	4976	0	0	Continuing	Continuing
DE78 Target Defeating Systems	1	0	0	0	0	0	0	0	0	0
DE79 Smoke, Obscurant-Advanced Development	5087	2789	3248	6567	5782	4976	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification

U. S. Forces must be able to effectively neutralize and degrade directed energy weapon systems and threat electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. This program element supports the Demonstration/Validation (DEMVVAL) of logistically supportable, high performance smoke and obscurant agents, munitions, and devices to improve the survivability of the combined arms force and complement combined weapons systems. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection large area and projected smoke systems. The smoke obscurant technologies supported by this program enhance smoke systems as combat multipliers. This program element focuses on efforts associated with advance technology development used to demonstrate general military utility to include demonstration and validation in the area of Smoke, Obscurant & Equip Systems Engineering and is correctly placed in Budget Activity 4.

Project DE78 Target Defeating Systems: Project provided Demonstration/Validation (DEMVVAL) of non-lethal riot control devices. Project funding was terminated in FY94 reflecting decision to concentrate on higher priority projects. Funding was transferred to other NBC programs.

FY 1994 Accomplishments:

- No Planned Program

FY 1995 Planned Program:

- No Planned Program

FY 1996 Planned Program:

- No Planned Program

FY 1997 Planned Program:

- No Planned Program

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BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603627A Smoke, Obscurant & Target Defeating Systems - AD	
<p>Project DE79 Smoke, Obscurant-Advanced Development: This program funds a multi-fuel Materiel Change (MC) for the M157 Smoke Generator System (SGS). Program funding will also support the Light Vehicle Obscuration Screening System (LVOSS) project to provide an on-board screening system for the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV). The LVOSS will maximize the use of standard grenade and launcher components and technology to disseminate smoke/obscurant material and fully obscure the vehicle.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted Pre-Production Qualification Test (PPQT) and complete M157 Smoke Generator System multi-fuel Materiel Change (2780) • LVOSS-Developed launcher and ammunition concepts (500) • LVOSS-Conducted Milestone 0 IPR (87) • LVOSS-Participated in Battle Lab Evaluation (1700) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • LVOSS-Conduct Milestone I/II IPR (60) • LVOSS-Evaluate Prototype for further development (1361) • LVOSS-Select materials and hardware for System Design (1319) • SBIR/STTR (49) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • LVOSS-Complete Prototype Design Package (800) • LVOSS-Fabricate Pre-Production Test (PPT) Hardware (1200) • LVOSS-Conduct PPT (1248) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • LVOSS-Fabricate PPQT Hardware (1800) • LVOSS-Conduct PPQT (3000) • LVOSS-Systems Engineering, Planning and Documentation (1767) 		

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PE NUMBER AND TITLE

4 - Demonstration And Validation

0603627A Smoke, Obscurant & Target Defeating
Systems - ADB. Program Change Summary

	FY 1994	FY 1995	FY 1996	FY 1997
Previous President's Budget	6039	2821	0	0
Appropriated Value	6039	2789	0	0
Adjustments to Appropriated Value	-971	0	0	0
a. SBIR/STTR decrement	(86)			
b. Reprogrammed out of PE	(885)			
Current Budget Submit/President's Budget	5068	2789	3248	6567

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4 - Demonstration And Validation

PE NUMBER AND TITLE

0603627A Smoke, Obscurant & Target Defeating

PROJECT

DE79

Systems - AD

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE79 Smoke, Obscurant-Advanced Development	5067	2769	3248	6567	5782	4978	0	0	Continuing	Continuing

C. Other Program Funding Summary:

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl Cont'd	Total Cost Cont'd
RDTE, A Budget Activity 5 PE 0604609A Project D200 Smoke/Obscurant	17140	3703	2000	0	0	2798	5196	7482		
OPA-3, A Appropriation G70700 - LVOSS										
M99104 - M157 Smoke Generator			5214	3614			2485	3977	4000	10462 8828

D. Schedule Profile:

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
M157AIE1-Conduct PPQT	2	3							
M157AIE1-MS III/TC									
LVOSS-System Design Review									
LVOSS-Prototype Evaluation									
LVOSS-Conduct Milestone I/II IPR									
LVOSS-Fabricate PPT Hardware									
LVOSS-Conduct PPT									
LVOSS-Complete Prototype Design Pkg									
LVOSS-Fabrication PPQT Hardware									
LVOSS-Conduct PPQT									
LVOSS-Systems Engineering Planning and Documentation									

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PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603627A Smoke, Obscurant & Target Defeating

DE79

Systems - AD

A. Project Cost Breakdown:

	FY 1994	FY 1995	FY 1996	FY 1997
Primary Hardware Development	885	504	385	385
Development Spt Equipment Acquisition	331	65	85	85
Systems Engineering	305	205	205	205
Integrated Logistics Support	165	60	60	60
Quality Assurance	250	85	85	85
Reliability, Maintainability and Availability	58	50	75	75
Configuration Management	135	86	85	175
Technical Data	550	55	200	300
Development Test and Evaluation	482	250	984	2700
Operational Test				1200
Contractor Engineering Support	147	225	95	150
Government Engineering Support	450	500	400	367
Program Management	922	305	209	360
Travel	116	55	45	65
Research	254	275	300	300
Training Development	17	20	35	55
SBIR/STTR		49		
Total	5067	2789	3248	6567

B. Budget Acquisition History and Planning Information:

Performing Organizations

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Misc.	C/MIPR		2953	2953		2352	0	0	0	601	2953
ERDEC		Oct 93	21843	21843		2158	2515	2553	3717	10900	21843
Battelle Labs	CPFF, MIPR	Feb 94	900	900		130	225	295	250	0	900

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603627A Smoke, Obscurant & Target Defeating

DE79

Systems - AD

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Support and Management Organizations											
Test and Evaluation Organizations											
Misc.			427	427		427	0	0	0	0	427
TECOM	MIPR	Oct 95	3700	3700				400	2600	0	3000
Government Furnished Property: Non											
Subtotal Product Development											
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project											
					Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
						4640	2740	2848	3967	11501	25696
						427		400	2600		3427
						5067	2740	3248	6567	11501	29123

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BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603640A Artillery Propellant Development

PROJECT

DB91

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB91 Uncharge	30080	25588	10848	0	0	0	0	0	0	90571

A. Mission Description and Budget Item Justification This program element is a dual faceted program, focused on efforts associated with the technology development of the XM 230 Unicharge, 155MM, Solid Propellant, Combustible Case System (XM230 Unicharge achieves zoning through the use of multiple increments), and the 52 Caliber Solid Propellant Armament System (XM297), used to demonstrate general military utility to include demonstration and validation in the area of artillery propellant and is correctly placed in Budget Activity 4. For XM230, each increment is self-contained with an ignition system, wear additives, flash and blast reducers, and decoupling agent. The XM297 is a one year funded effort to develop a Unicharge-based armament system as a back-up to the AFAS Liquid Propellant armament system. The XM297 effort shall integrate a bolt-in, bolt-out gun mount for Paladin, laser ignition, integral mid-wall cooling gun tube, slide block breech, integral muzzle brake and progressive rifling.)

Project DB91 Artillery Propellant Development:**FY 1994 Accomplishments:**

- XM230: Insensitive munitions development, producibility maturation, computer modeling, additive and coating compatibility; XM297: Laser ignition development, design bolt-in/bolt-out gun mount, design and manufacture of second generation integral midwall cooling tube, Paladin system integration feasibility study (28262)
- Project Management support, management engineering services, other services (1088)
- XM230: Low zone testing and loading variability testing; XM297: Complete proof and principle cannon testing, gun mount recoil test, laser ignition testing (710)

FY 1995 Planned Program:

- XM230: Core igniter development, stand alone bottom charge development; XM297: Continued development of XM297 cannon and laser ignitor system, conduct ammunition handling and rate-of-fire/thermal management Paladin mount integration (19701)
- Project Management support and management engineering services (870)
- Initiate cannon pre-fatigue/wear testing and continue engineering development testing, XM297; interior ballistic test and ballistic firings, XM230 (4479)
- SIBR/STTR (538)

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PROJECT

4 - Demonstration And Validation

0603640A Artillery Propellant Development

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FY 1996 Planned Program:

- XM297: Continue development of XM297 cannon and laser ignitor systems, conduct ammunition handling rate-of-fire, thermal management demonstrations, (XM230): Provide Unicharge support for XM297 program (7046)
- Project management support and management engineering services (300)
- Cannon pre-fatigue/wear test completion (3600)

B. Program Change Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Previous President's Budget				
Appropriated Value	30533	8137		
SBIR & STTR Decrement	-473	25588		
Current Budget Submit/President's Budget	30060	25588	10946	

Change Summary Explanation:

Funding: None

Schedule: Program will continue development efforts for Unicharge and XM297 through fourth quarter FY 96.

Technical: FY 1996 XM297 cannon program will focus on development of solid propellant cannon only.

C. Other Program Funding Summary: None

D. Schedule Profile

	FY 1994		FY 1995		FY 1996		FY 1997	
1	2	3	4	1	2	3	4	1
Acquisition Milestones								
Milestone II IPR (XM230)								
Acquisition Milestones								
Milestone III IPR (XM230)								
Engineering Milestones								
Combustible Case Design Freeze (XM230)								

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	FY 1994				FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Engineering Milestones																
Propellant Design Baseline																
Test Milestones (XM297)		X*														
Monoblock Cannon																
Test Milestones																
83 Round Cannon Test																
Test Milestones																
Integral Midwall Cooling Cannon Design																
Test																
XM297 Cannon Milestones - Engineering																
Development Testing																
XM297 Cannon Milestones - Pre-Fatigue																
& Wear Testing																
XM297 Cannon Milestones - Hydraulic																
Fatigue Testing																
XM297 Cannon Milestones - Interim Safe																
Service Life																

X

X

X

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4 - Demonstration And Validation

0603640A Artillery Propellant Development

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A. Project Cost Breakdown

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Product Development	28262	19701	7046	
Support and Management	1088	870	300	
Test and Evaluation	710	4479	3600	
SBIR/STTR		538		
Total	30060	25588	10946	

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	Budget to Complete	Total Program
Product Development Organizations ARMTEC Defense	SS/CPIF	Aug 92	3577	3577	856	2388	0				3244
Products, Coachelle, CA											
Olin Corp, St. Petersburg, FL	FF	Jul 94	564	564		264	300				564
Olin Corp, Marion, IL (Load, Assembly & Pack)	FF	Sep 94	1269	1269		919	350				1269
DSTI, Greenbelt, MD	FF	May 94	1265	1265		1265					1265
TBD (Ignitor material)	TBD	TBD	500	500			500				500

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BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT		
4 - Demonstration And Validation			0603640A Artillery Propellant Development								DB91		
Contractor or Government	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to	Total		
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program		
Radford Army Ammunition Plant, Radford, VA	FF	TBD	350	350			350				350		
Olin, St. Petersburg, FL	FF	TBD					300				300		
(Additive Material)													
H. Shear, Torrence, CA	FF	TBD					150				150		
United Defense - Limited	FF	TBD					500				500		
Partnerships, York, PA						400							
Other contracts (\$100K or less)							410	100			910		
AMCCOM, Various activities					18384	21902	15731	6946			62963		
Radford Army Ammun. Plant (FFP)		Aug 92			2474						2474		
Army Research Laboratory, Adelphi, MD					1116	1111	710				2937		
US Army Defense Ammo Ctr & Sch, Savanna, IL	PO						200				200		
Wright-Paterson AFB, Dayton, OH	PO						115				115		
Various Activities Support and Management Organizations						13	85				98		
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Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
AMCCCOM, Various activities					1000	1088	870	300			3258
Test and Evaluation Organizations											
TECOM, Yuma, AZ						710	4029	3600			8339
AMCCCOM, Dover, NJ					147	450	450				1047
SBIR/STTR							538				538

Government Furnished Property

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development				22830	28262	19701	7046			77839
Subtotal Support and Management				1000	1088	870	300			3258
Subtotal Test and Evaluation				147	710	4479	3600			8936
SBIR/STTR						538				538
Total Project				23977	30060	25588	10946			90571

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COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	145624	172390	201513	267885	337594	308359	44984	0	0	1729685
DB82 Systems Engineering Analysis (SEA)	841	0	0	0	0	0	0	0	0	2577
DB87 Combat Vehicle Survivability	13249	15213	0	0	0	0	0	0	0	37520
DB88 Future Armored Resupply Vehicle (FARV) Adv Dev	23864	21563	71054	93543	118603	122952	15987	0	0	486811
DB96 Component Development	31204	22485	0	0	0	0	0	0	0	53689
D409 Advanced Field Artillery System (AFAS)	76466	113129	130459	174342	218991	185407	28977	0	0	1148088

A. Mission Description and Budget Item Justification Under PEO ASM management, the Advanced Field Artillery System (AFAS) and the Future Armored Resupply Vehicle (FARV) were the lead PEO ASM systems. The Conventional Systems Committee and the Defense Acquisition Executive concurred in the ASM restructured program and notification was provided to Congress on 1 Jun 92. Subsequently, on 1 Mar 94, PM-AFAS and PM-FARV transitioned to a single (06) Project Manager and management of AFAS/FARV was transferred from PEO ASM to PEO Field Artillery Systems (FAS). On 15 Nov 94, AFAS/FARV was approved by the Defense Acquisition Board to proceed into the Demonstration and Validation phase as a single program. This program element focuses on efforts associated with the technology development of AFAS and FARV used to demonstrate general military utility to include demonstration and validation in the area of field artillery systems and is correctly placed in Budget Activity 4. AFAS and FARV are the Army's next generation indirect fire cannon and artillery resupply systems for the heavy force. Together, these systems will provide an overmatching fire power capability that will support the force commander's goal of dominating the maneuver battle. AFAS and FARV will incorporate advanced technologies to increase accuracy, rate of fire, survivability, mobility and ammunition handling speed, and to decrease crew size. When fielded, these systems will displace the M109A6 Paladin self-propelled Howitzer and M992 Field Artillery Ammunition Supply Vehicle in Force Package I units.

Project DB82 - Systems Engineering Analysis (SEA): SEA is a contract effort in support of the PEO/PM's assisting in the preparation of technical plans for PEO ASM and PEO FAS, coordinating data/information flow between the AFAS and FARV, and ensuring optimum commonality and reduced performance risk.

FY 1994 Accomplishments: Conclude SEA contract support (841)

FY 1995 Planned Program: Program concluded at the end of FY 1994.

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BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv	
	Dev	
<p>FY 1996 Planned Program: Program concludes at the end of FY 1994.</p> <p>Project DB87 - Combat Vehicle Survivability: This effort evaluates methods of reducing AFAS and FARV susceptibility to smart/guided top and horizontal attack threats and characterizes methods of reducing system vulnerability to ballistic and non-ballistic threats. Susceptibility reduction efforts consist of: analytical characterization of top and direct fire engagement timelines (the time required for a threat weapon or smart top attack munitions to detect and engage its target), identification of sensor and countermeasure options and performance criteria; and simulation and field tests verifying the operational performance of selected devices. This work, performed in coordination with TACOM Advanced Land Combat efforts, develops close-in self-protection concepts capable of detecting, tracking, and defeating both direct and indirect fire threats. AFAS and FARV vulnerability reduction activities emphasize the following: Development and demonstration of the potential to compartmentalize Liquid Propellant (LP) and 155MM HE projectiles; generation of ballistic shock specifications; definition of interior shielding technologies providing integrated radiation and spill protection for the crew; maturation and demonstration of NBC collective protection technologies; and demonstration of standoff chemical agent detection. This work will provide the basis for development of a performance specification supporting AFAS and FARV.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Product Development - Top attack protection, CATOX/PSA NBC protection, armament compartmentation, NBC Standoff protection (10447) • Support and Management - System survivability assessment, ARL analytical support (2567) • Testing and Evaluation - China Lake LP test, APG/Yuma compartment tests (235) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Product Development - Top attack protection, LP compartmentation (9496) • Support and Management - Support to AFAS/FARV Product Development Teams (3683) • Simulation, Modeling and Test (1715) • SBIR/STTR (319) <p>FY 1996 Planned Program: Reprogrammed to D409.</p> <p>Project DB88 - Future Armored Resupply Vehicle (FARV): The present 155MM artillery system has a lightly protected resupply vehicle with limited payload/mobility and exposed crews during rearm/resupply operations. The Future Armored Resupply Vehicle (FARV) will increase ammunition payload and will provide automated, rapid transfer of ammunition, liquid propellant and fuel to the Advanced Field Artillery System (AFAS). The FARV will support the decentralized and continuous operations of the AFAS thereby increasing AFAS mission effectiveness. Automation and robotics in the FARV will allow crew reduction resulting in life cycle cost benefits over the current system. The FARV will have increased ballistic and non-ballistic survivability features. Mobility improvements feature increased vehicle range (405 km), speed (39 to 48 km) and cross country/position navigation.</p>		

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FY 1994 Accomplishments:

- Product Development Team support and management for the Martin Marietta contract for the 155MM Integrated Liquid Propellant Artillery Resupply System (ILPARS) as well as evaluation of critical resupply areas to include robotic handling, ammunition transfer, ammunition upload, and ammunition identification. (9486)
- Product Development Team support and management for efforts for the Liquid Propellant Transfer System and management of matrix support resources required to achieve Milestone I programmatic and technical objectives. Identify and allocate risk to system software architecture/interfaces, C3I survivability enhancements and other related vehicle interfaces (11878)
- Sole Source contracts with United Defense Limited Partnership (UDLP) for efforts associated with pre-contract costs for Development Phases I & II AFAS/FARV. (2500)

FY 1995 Planned Program:

- Initiation of the Requirements and Analysis, Component Maturation (RA/CM) (5808)
- Completion of Martin Marietta, 155MM Integrated Liquid Propellant Resupply efforts. (500)
- Maturation of Critical Resupply Technology in the areas of robotic handling, ammunition upload, identification and continuation of product development team, matrix and core management support efforts for the liquid propellant transfer system. (14831)
- SBIR/STTR (424)

FY 1996 Planned Program:

- Development Phase I/II Contract Efforts (49500)
- Continued Product Development Team support, management of the liquid propellant technology and other management support. (20159)
- Maturation of Critical Resupply Technology in the areas of robotic handling, ammunition transfer, identification and upload. (1395)

FY 1997 Planned Program:

- Completion of Phase I, component maturation/simulation efforts and initiation of Phase II prototype fabrication and demonstration contract. (67600)
- Continued product development team support, management of the liquid propellant technology and other management support as well as initiation of government testing efforts. (25333)
- Completion maturation of critical resupply technologies. (610)

Project DB98 - Component Development: Congress has directed the acceleration of the AFAS and FARV program. This project develops and matures certain mobility technologies specifically required for the AFAS and FARV.

FY 1994 Accomplishments:

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BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603645A Armored System Modernization - Adv		
	Dev		
<ul style="list-style-type: none"> • Product Development (29401) • Support and Management (1630) • Test and Evaluation (173) 			
FY 1995 Planned Program: <ul style="list-style-type: none"> • Product Development (18631) • Support and Management (3303) • Test and Evaluation (79) • SBIR/STTR (472) 			
FY 1996 Planned Program: Program concludes at the end of FY 1995.			
Project D409 - Advanced Field Artillery System (AFAS): AFAS is the Army's next generation 155MM self-propelled howitzer system providing high payoff technology capabilities in support of the maneuver force. This project develops AFAS Advanced Technology Demonstrator (ATD); matures the Regenerative Liquid Propellant Gun (RLPG); matures the processing, packaging and formulation of XM46 Liquid Propellant; matures the fire control/artillery accuracy componentry; and, provides funding for the Development Phases I/II efforts. AFAS requirements include leap-ahead capabilities in range, rate-of-fire, sustained fire, time-on-target, accuracy, responsiveness, automated ammunition handling/resupply, reduced crew size and survivability.			
FY 1994 Accomplishments: <ul style="list-style-type: none"> • Product Development - Continue efforts in support of the Advanced Technology Demonstration and technical maturation of critical components (RLPG, Liquid Propellant, Fire Control). Award Contract Definition portion of the Development Phases I/II contract. (65330) • Support and Management - Continue project management efforts, to include scientific and engineering management services. Prepare the Request for Proposal (RFP) for the Development Phases I/II contract. Begin preparation of the Independent Government Cost Estimate (IGCE). (9619) • Test and Evaluation - Continue Armament/Mount reliability testing, Liquid Propellant testing and Insensitive munition testing/test projectiles. Begin ATD integration. (1517) 			

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FY 1995 Planned Program:

- Product Development - Award Requirements Analysis and Maturation portion of the Development Phases I/II contract, as well as the balance of the Development Phase I contract efforts. Continue efforts in support of the Advanced Technology Demonstration and technical maturation of critical components (RLPG, Liquid Propellant, Fire Control). (97592)
- Support and Management - Continue project management efforts, to include scientific and engineering management services. Complete both the Independent Government Cost Estimate (IGCE) and the Technical Evaluation for the Development Phases I/II contract. (9634)
- Test and Evaluation - Complete ATD integration. Purchase Liquid Propellant. Continue Armament/Mount reliability testing and Insensitive munition testing. (3555)
- SBIR/STTR (2348)

FY 1996 Planned Program:

- Product Development - Continue developmental efforts under the Development Phases I/II contract. Continue efforts in support of maturation of critical RLPG technologies. (120042)
- Support and Management - Continue project management efforts, to include scientific and engineering analysis and engineering management services. (10154)
- Test and Evaluation - Purchase Liquid Propellant. Begin Contractor DT&E under the Development Phases I/II contract. (263)

FY 1997 Planned Program:

- Product Development - Continue developmental efforts under the Development Phases I/II contract. Continue efforts in support of maturation of critical RLPG technologies. (147636)
- Support and Management - Continue project management efforts, to include scientific and engineering analysis and engineering management services. (9937)
- Test and Evaluation - Purchase Liquid Propellant, ammunition and fuzes required for the initiation of EDT-A testing. Begin EDT-A testing. Conduct Liquid Propellant Proof-of-Principle testing. (16769)

B. Program Change Summary

Previous President's Budget	FY 1994	FY 1995	FY 1996	FY 1997
Appropriated Value	147876	175476	212598	283148
SBIR/STTR Decrement	147876	172390		
	-2252			
Current Budget Submit/President's Budget	145624	172390	201513	267885

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4 - Demonstration And Validation	0603645A Armored System Modernization - Adv Dev	February 1995
Project D388 - Future Armored Resupply Vehicle (FARV) Funding: None Schedule: The AFAS/FARV program is pursuing a three phased streamlined development strategy. Under this approach, the traditional Demonstration/Validation (Dem/Val) phase of the program is replaced with the Simulation and Component Maturation phase (Phase I) and a Prototype Fabrication and Demonstration phase (Phase II). Technical: None		
Project D409 - Advanced Field Artillery System (AFAS) Funding: None Schedule: The AFAS/FARV program is pursuing a three phased streamlined development strategy. Under this approach, the traditional Demonstration/Validation (Dem/Val) phase of the program is replaced with the Simulation and Component Maturation phase (Phase I) and a Prototype Fabrication and Demonstration phase (Phase II). Technical: None		
Change Summary Explanation: None		

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Dev

COST (In Thousands)

EV 1884

FY 1995
Estimate

人々

10

FY 1997
Estimate

861人

	FY 1988	Estimate
1. Operating Expenses		
a. Salaries and Benefits	1,000,000	1,000,000
b. Travel	50,000	50,000
c. Telephone	20,000	20,000
d. Postage	10,000	10,000
e. Printing	10,000	10,000
f. Supplies	10,000	10,000
g. Other	10,000	10,000
Total	1,110,000	1,110,000
2. Capital Expenses		
a. Equipment	100,000	100,000
b. Construction	50,000	50,000
c. Other	10,000	10,000
Total	160,000	160,000
Total	1,270,000	1,270,000

	FY 2000	FY 2001
Estimated		
Actual		

FY 2001
Estimate

Cost to

Total Cost

DB62 Systems Engineering Analysis (SEA)

148

o

6

0 257

C. Other Program Funding Summary: No.10

D. Schedule Profile

1	2	FY 1994
3		

4X

FY 1995
2 3

4

FY 1996
2 3

FY 1997	2	3
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Conclude contract

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[illegible]

C. Other Program Funding Summary: None

D. Schedule Profile

	FY 1994		FY 1995		FY 1996		FY 1997	
	1	2	3	4	1	2	3	4
Monitor demo of Top Attack Protection								
Complete PSA/CATOX filtration studies			X*					
Complete Chemical Standoff Detection			X*					
(LSCAD) tech demonstration			X*					
Demonstration of self-protection systems				X*				
Complete Artillery System BDS-D Exper				X*				
Complete NBCCS Materials								
Compatibility Study								

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A. Project Cost Breakdown

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Product Development	10447	9496		
Support and Management	2567	3683		
Testing and Evaluation	235	1715		
SBIR/STTR		319		
Total	13249	15213		

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations					7199	10447	9496				27142
Support and Management Organizations					1703	2567	3683				7953
SBIR/STTR							319				319
Test and Evaluation Organizations					156	235	1715				2106

Government Furnished Property: None

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Dev

	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development	7199	10447	9496				27142
Subtotal Support and Management	1703	2567	4002				8272
Subtotal Test and Evaluation	156	235	1715				2106
Total Project	9058	13249	15213				37520

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PE NUMBER AND TITLE

4 - Demonstration And Validation

0603645A Armored System Modernization - Adv DB88

Dev

PROJECT

DB88

COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D888	Future Armored Resupply Vehicle (FARV) Adv Dev	23864	21563	71054	93543	118603	122852	15987	0	0	489811

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To Compl Cont'd	Total Cost Cont'd
RDTE, A Budget Activity 5										
PE 0604645A, Project D418 Armored Family of Vehicles - Engineering Development										
RDTE, A Budget Activity 5										
PE 0604645A, Project D2KT AFAS Operational Test						3740	1220	100	Cont'd	Cont'd

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
Development Phases I/II Request for Proposal (RFP) Release	1	2	3	4
Award Contract Definition Phase of Development Phases I & II Contract	2	3	4	1
Award Requirements Analysis and Maturation Phase of Development Phases I/II Contract Milestone I Review	3	4	1	2
Award Development Phases I/II Contract SDR	X*	X*	X	X
Development Phase II IPR	X*	X*		X

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Dev

A. Project Cost Breakdown

Development RA/CM Phase I & II Contract	FY 1994	FY 1995	FY 1996	FY 1997
Contractor Engineering Support	2500	5808	49500	67600
Government Engineering Support	5027	2353	4800	7100
Program Management Support	15628	11696	13054	15043
SBIR/STTR	709	1282	3700	3800
Total	0	424	0	0
	23864	21563	71054	93543

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
United Defense Limited Partnership	SS/CPFF	Sep 94	TBD	TBD	N/A	2500		5808	67600	Cont'd	Cont'd
Martin Marietta, Burlington, VT	SS/CPFF	Mar 93	5700	5700	2600	2600		500		0	5700
ARDEC, Picatinny Arsenal, NJ	PO							300	3000	Cont'd	Cont'd
Support and Management Organizations											
Dept. of Energy - Oak Ridge Nat'l Labs, Tenn.	MIPR					6903		3100	610	0	17233

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603645A Armored System Modernization - Adv

DB88

Dev

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete Cont'd	Total Program Cont'd
PM AFAS/FARV, Picatinny Arsenal, NJ					648	709	1282	3700	3800		
ARDEC, Picatinny Arsenal, NJ	PO				4448	7066	6330	5515	6447	Cont'd	Cont'd
Other Field Activities	PO				1443	1659	1966	3144	4386	Cont'd	Cont'd
Various other contracts					4881	2427	1853	4800	7100	Cont'd	Cont'd
Test and Evaluation Organizations											
TECOM, Yuma	PO								600	Cont'd	Cont'd
Proving Grds, AZ											
SBIR/STTR							424				
Government Furnished Property: None											
Subtotal Product Development					Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete Cont'd	Total Program Cont'd
Subtotal Support and Management					2600	5100	6608	52500	70600	Cont'd	Cont'd
Subtotal Test and Evaluation					16645	18764	14531	18554	22343	Cont'd	Cont'd
SBIR/STTR					0	0	0	0	600	Cont'd	Cont'd
Total Project					19245	23864	21563	71054	93543	Cont'd	Cont'd

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603645A Armored System Modernization - Adv								DB98	
		Dev									
	COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB98	Component Development	31204	22485	0	0	0	0	0	0	0	53689
C. Other Program Funding Summary: None											
D. Schedule Profile											
1	Automotive Test Rig (ATR)	FY 1994 2	3	4	1	4	1	4	1	2	4
	ATR Testing		X*								
	Final Software SIL demo		X*								
	Milestone 1 Decision		X*								

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DATE _____

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BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603645A Armored System Modernization - Adv

Dev

PROJECT

DB98

A. Project Cost Breakdown

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
29401	18631		
1630	3303		
173	79		
	472		
31204	22485		

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
						29401	18631				48032
Support and Management Organizations											
						1630	3303				4933
SBIR/STTR											
							472				472
Test and Evaluation Organizations											
						173	79				252

Government Furnished Property: None

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RLT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603645A Armored System Modernization - Adv

PROJECT

D409

D409	Advanced Field Artillery System (AFAS)	COST (In Thousands)										Total Cost
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete		
		76488	113129	130459	174342	218991	185407	28977	0	0	1149098	

C. Other Program Funding Summary

RDTE, A Budget Activity 5
PE 0604645A, Project D417 AFAS EMD
RDTE, A Budget Activity 5
PE 0604645A, Project D2KT AFAS EMD
RDTE, A Budget Activity 5
PE 0604645A, Project D175 AFAS EMD

D. Schedule Profile

[illegible]

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603645A Armored System Modernization - Adv

D409

Dev

A. Project Cost Breakdown

Product Development	FY 1994	FY 1995	FY 1996	FY 1997
Support and Management	65330	97592	120042	147636
Test and Evaluation	9619	9634	10154	9937
SBIR/STTR	1517	3555	263	16769
Total	76466	113129	130459	174342

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
United Defense, Minneapolis, MN	Comp/CPIF	May 91	76473	76473	61281	14892	300				76473
Martin Marietta, Pittsfield, MA	SS/CPIF/CP FF	Jan 92	TBD	103449	70712	26587	6150				103449
United Defense, Minneapolis, MN	SS/CPIF	Sep 94	TBD	TBD	N/A	5000	68222	101600	134300	Cont'd	309122
AMCCOM, Picatinny Arsenal, NJ, Watervliet Arsenal, NY, Rock Island Arsenal, IL					39239	9888	10657	12883	9535	Cont'd	82202

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PE NUMBER AND TITLE

PROJECT

D409

4 - Demonstration And Validation

0603645A Armored System Modernization - Adv

Dev

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete Cont'd	Total Program
ARL, Aberdeen Proving Grd, MD, Watertown, MA	SS/FFP	Sep 93	1988	1988	7839	1465	2794	1390	1000		14488
Olin, Charleston, TN					1988						1988
Grunman, Beth Page, NY		Nov 93	4275	4275	3475	800					4275
Martin Marietta, Pittsfield, MA	Comp/CPFF	Jan 93	4594	4594	2166	2018	410				4594
LB&M, Lawton, OK	Comp/CPFF	Feb 93	1806	1806	1806						1806
Various other OGA's and Contractors					13254	4680	9059	4169	2801	Cont'd	33963
Support and Management Organizations											
PM AFAS/FARV, Picatinny Arsenal, NJ					3866	3035	2595	4895	4895	Cont'd	19286
AMCCOM, Picatinny Arsenal, NJ					4740	4773	6039	3900	3900	Cont'd	23352
TRW, Redondo Beach, CA					2188	1315					3503
Various OGAs and Contractors					916	496	1000	1359	1142	Cont'd	4913
Test and Evaluation Organizations											

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BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603645A Armored System Modernization - Adv

PROJECT

D409

Dev

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete Cont'd	Total Program
TECOM, Yuma					1934	1517	2705		3973		10129
Proving Grds, AZ,											
CSTA, Aberdeen											
Proving Grds, MD											
Morton Thiokol,	SS/FPI	May 93	3307	3307	3307						3307
Elkton, MD											
Olin, Charleston,	SS/FPI	May 93	3168	3168	3168						3168
TN											
TBD-LP Purchase		TBD	TBD	TBD	N/A		850	263	8704	Cont'd	9817
TBD-Ammo		TBD	TBD	TBD	N/A				4092	Cont'd	4092
Purchase											
SBIR/STTR							2348				2348
Government Furnished Property: None											
Subtotal Product Development					Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Support and Management					201760	65330	97592	120042	147636		532360
Subtotal Test and Evaluation					11710	9619	9634	10154	9937		51054
Total Project					8409	1517	5903	263	16769		32861
					221969	76466	113129	130459	174342	Cont'd	Cont'd

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603649A Engineer Mobility Equipment Advanced Development								DG24	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG24	M1 Breacher	29070	15728	5615	0	0	0	0	0	0	64794
<p>A. Mission Description and Budget Item Justification</p> <p>The M1 Breacher will be developed around the M1-Abrams tank chassis and will integrate a versatile/survivable full-width mine clearing blade with automatic depth control, a power driven excavating arm, and an armored commander's control station. The M1 Breacher will provide the Combat Engineer with significantly improved mission effectiveness and crew/vehicle survivability while clearing minefields and removing complex natural and man-made obstacles at the forward edge of the battlefield. The M1 Breacher will be capable of moving with, and will be as survivable as, the force it is supporting. This program element/project is correctly placed in Budget Activity 4, focusing on efforts associated with advanced technology development and validation in the areas of mine clearing blade automatic depth control, power bus, vetronics, vehicle drive-by-wire, survivability, and hydraulics. The project transitions to PE #0604649A, DG25, for the Engineering and Manufacturing Development (EMD) phase of the acquisition life cycle in FY 96.</p> <p>Project DG24 - Breacher Advanced Development: The M1 Breacher will provide the maneuver forces the capability to conduct in-stride breaches of complex obstacles using its full-width mine clearing blade and power driven excavating arm.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conduct Critical Design Review (7358). • Complete vehicle design drawings and begin component fabrication (15267). • Begin prototype fabrication (6445). <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Complete prototype fabrication (6430). • Conduct contractor shakedown testing and training (4585). • Complete Preliminary Draft Equipment Publications (2552). • Begin government development testing (1847). • SIBR/STTR (312). <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Complete government development testing and conduct Early User Testing (2370). • Refine design, validate logistics functions, and apply engineering changes (3245). 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY		PE NUMBER AND TITLE				DATE		PROJECT	
4 - Demonstration And Validation		0603649A Engineer Mobility Equipment Advanced Development				February 1995		DG24	
B. <u>Program Change Summary</u>									
Previous President's Budget		FY 1994	FY 1995	FY 1996	FY 1997				
Appropriated Value		29464	11339	0					
Adjustments to Appropriated Value		29464	15726						
a. SIBR/STTR decrement (-474)		-394							
b. Reprogrammed into PE (80)									
Current Budget Submit/President's Budget		29070	15726	5615					
C. <u>Other Program Funding Summary</u>									
RDTE, A Budget Activity 5		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001
PE 0604649A Project DG25 M1 Breacher Dev			10918	13275	7908	10610			
PA, WTCV GZ3200 (Breach MOD)			74822	93228	120228	130440	Cont'd		
PA, WTCV GEO175 Breacher (Spares)			1014	1216	2405	2229	Cont'd		
D. <u>Schedule Profile</u>									
Conduct Critical Design Review (CDR)		FY 1994	FY 1995	FY 1996	FY 1997				
Start Development and Early User Testing		1 2 3	4 1 2 3	4 1 2 3	4 1 2 3				
		X*		X					
Conduct Milestone II Review				X					
Award Engineering and Manufacturing Development (EMD) Contract				X					
Conduct Low Rate Initial Production (LRIP) In-Process Review (IPR)									
Award LRIP Contract									
</									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603649A Engineer Mobility Equipment Advanced Development

DG24

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Development Engineering	24791	7345	1150	0
Logistics Support	1867	2552	187	0
System Test & Evaluation	205	2932	3478	0
System Project Management	2207	2585	800	0
SIBR/STTR		312		
Total	29070	15726	5615	

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Contract

Government Method/Type

Performing or Funding

Activity Vehicle

Award or

Obligation

Date

Performing

Activity

EAC

Project

Office

EAC

Total

Prior to

FY 1994

FY 1994

FY 1995

FY 1996

FY 1997

Budget to

Complete

Total

Program

Product Development Organizations

United Defense SS-CPIF

York, PA 9/92 (K Mod)

Other Contracts Various

Support and Management Organizations

TACOM

Warren, MI

ANAD

Anniston, AL

Other Gov't

Agencies

Other

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY		PE NUMBER AND TITLE				DATE	PROJECT		
4 - Demonstration And Validation		0603649A Engineer Mobility Equipment Advanced Development				February 1995	DG24		
Test and Evaluation Organizations									
TECOM									
APG, MD									
146 190 1547 1570 0 0 3453									
Government Furnished Property									
Contract									
Method/Type									
Award or									
Obligation									
Date									
Delivery									
Date									
Total									
Prior to									
FY 1994									
FY 1994									
FY 1995									
FY 1996									
FY 1997									
Budget to									
Complete									
Total									
Program									
63394									
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project									
14383 29070 15726 5615 1400 64794									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603653A Advanced Tank Armament System (ATAS)								DB99	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB99 Advanced Tank Armament System		0	4940	9655	9979	10015	10058	9982	9977	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification Our success in Desert Storm was due in large part to the superiority of the armament systems of our tanks over those of the Iraqi Army. We were able to see, hit and kill the enemy long before they were even aware of our presence. The goal of the Advanced Tank Armament System (ATAS) program is to maintain that superiority over increasingly more capable future enemy tanks. The ATAS program is one of the principal programs supporting tank lethality improvements. This program is developing and demonstrating a number of key gun and fire control technologies which offer significant payoffs in lethality for the next major upgrade to the Abrams tank after the M1A2. This follow-on to the M1A2 is notionally identified as Tank 1080 based on the original plan to purchase 1079 M1A2.</p> <p>The ATAS Program has two main phases (ATAS I and ATAS II) and a common work effort (Core Technology). Core Technology develops gun and fire control system components that are applicable to both the current M1A2 1553 Data Bus architecture and a new open distributed digital architecture being developed under this program. Core Technology consists of the XM291 gun with Automatic Muzzle Reference System, Automatic Target Tracker, and Second Generation Thermal Sights for Commander and Gunner. ATAS I integrates the Core Technology components into the size weight and current electronic architecture of the M1A2. ATAS II develops an automatic loader, Combat Protection System, Continuous Muzzle Reference System, Electric Gun/Turret Drive, Digital Adaptive Stabilization and a new turret. These components along with the Core Technology are integrated by ATAS II into a high speed digitized open distributed electronic architecture capable of easily incorporating new components as they are developed.</p> <p>The ATAS program is appropriately in Budget Activity 4 - Demonstration and Validation. The activities conducted in the ATAS Program fall under the heading of Demonstration and Validation as defined in Part 3, DoDI 5000.2 The ATAS program is conducting prototyping, testing and early operational assessment of critical tank armament systems, subsystems, and components; identifying cost drivers and alternatives using modeling and simulation, and working with the User representative to establish performance objectives and identify cost-schedule-performance trade-offs.</p> <p>FY 1994 Accomplishments: Program was not appropriated in FY94</p> <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Core Technology - Design & fabricate the new gun tube and support structure (1900) ATAS I - work delayed until FY 98 due to Congressional reduction in funding (0) ATAS II - complete Brassboard Demonstration and Brassboard Systems Integration Laboratory (2947) SBIR/STTR Reduction (93) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603653A Advanced Tank Armament System (ATAS)	February 1995
FY 1996 Planned Program:		
• Core Technology - test gun tube/support structure (1300)		
• Core Technology - design/fabricate circuit board hardware for M1A2/Tank 1080 integration (1555)		
• ATAS II - procure objective hardware, integrate software with objective hardware (7100)		
FY 1997 Planned Program:		
• Core Technology - integrate circuit board hardware with software (1679)		
• ATAS II - complete Objective Hardware Systems Integration Demonstration (6300)		
• ATAS II - complete turret design (2000)		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1995
Appropriated Value	0	10075
Adjustments to Appropriated Value	0	4940
Current Budget Submit/President's Budget	0	4940
		FY 1996
		10026
		9979
		9979
C. Other Program Funding Summary: N/A		
D. Schedule Profile		
Complete design /fabrication of improved gun support structure (Core Technology)	FY 1994	FY 1995
Complete the improved gun stabilization test (Core Technology)	1 2 3	4 1 2 3 4
Complete ATAS II Brassboard Demonstration		X
Complete ATAS II Brassboard Systems Integration Lab		X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 1995

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE					
4 - Demonstration And Validation	0603653A Advanced Tank Armament System (ATAS)					DB99
A. Project Cost Breakdown						
	FY 1994	FY 1995	FY 1996	FY 1997		
Primary Hardware Development/Contractor		2440	7200	6400		
Primary Hardware Development/Government		1600	700	2000		
Quality Assurance		100	300	300		
Developmental Test & Evaluation		100	600	100		
Program Management (PM-TMAS/ARDEC)		500	600	600		
Miscellaneous		200	555	579		
Total	0	4940	9955	9979		
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
Performing Activity	EAC	FY 1994	FY 1994	FY 1995	FY 1996	Budget to Complete
Method/Type or Funding Vehicle						
Award or Obligation Date						
Product Development Organizations						Total Program
Texas	49600	*	0	2400	7100	6300
Bechtel		*	0	1400	700	2000
Boeing	59000	*	0	40	100	100
ARDEC				200		
* Under Different PE (0604630A)						
Support and Management Organization						
PM-TMAS/ARDEC				600	900	900
Test and Evaluation Organizations						
CSTA				100	600	100
Misc				200	555	579
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE
		February 1995

PE NUMBER AND TITLE

0603653A Advanced Tank Armament System (ATAS)

Total

**Prior to
FY 1994**

FY 1994FY 1995

FY 1996

FY 1997

Budget to Complete

Program

Total Project

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
4 - Demonstration And Validation		0603713A ADDS-Army Data Distribution System									
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		0	5399	6694	9707	8005	0	0	0	36800	345041
D370 JTIDS/EPLRS (Formally known as PJH-PLRS/JTIDS Hybrid)		0	5399	5997	6006	8005	0	0	0	36800	340563
D2QT EPLRS/JTIDS OPER TEST		0	0	697	3781	0	0	0	0	0	4478

A. Mission Description and Budget Item Justification: The Army Data Distribution System (ADDS), which consists of the Enhanced Position Location Reporting System (EPLRS), the Joint Tactical Information Distribution System (JTIDS), and Near Term Digital Radio (NTDR) provides support to the Army's air defense, fire support, maneuver control, intelligence and combat service support automated system. Project D370 is capable of "digitizing data messages" that must be transmitted on the battlefield. It is capable of providing multi-functions: data communications, unit locations and unit identifications. The ADDS network automatically utilizes manpack, surface vehicle and airborne vehicle user units to achieve range extension. It has been designed specifically to meet the data communication requirements of emerging tactical automated data processing and sensor based systems. The ADDS will provide reliable, real-time, secure, jam-resistant data communications and position location capabilities to the soldier and his unit commander. Project D2QT finances the direct costs of planning and conducting operational testing of the Joint Tactical Information Distribution System (JTIDS) by the Operational Test and Evaluation Command (OPTEC). These projects focus on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of Army Data Distribution and are correctly placed in Budget Activity 4.

Project D370-EPLRS/JTIDS: This project provides data distribution support to the Army's air defense, fire support, maneuver control, intelligence and combat service support automated systems, and is capable of "digitizing data messages" that must be transmitted on the battlefield. The project will provide reliable, real-time, secure, jam-resistant data communications and position location capabilities to the soldier and his unit commander.

FY 1994 Accomplishments:

- Continued JTIDS Development (2839)
- Completed JTIDS Class 2M (CL2M) Reliability Dev Test (227)
- Conducted JTIDS CL2M Limited User Test (LUT) (919)
- Began JTIDS Life Cycle Software Engineering (LCSE) (1000)
- Continued EPLRS Down-sized Net Control Station (11271)
- Initiated EPLRS System Improvement Program (3100)

FY 1995 Planned Program:

- Continue JTIDS Development(2576)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
4 - Demonstration And Validation	0603713A ADDS-Army Data Distribution System	
<ul style="list-style-type: none"> Continue Operational Test (OT) of EPLRS downsized NCS-E (2427) Continue JTIDS LCSE (300) Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR) (96) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> JTIDS Software Development Completion (1200) NCS (D) Software Development Completion (1600) NTDR Program Hardware and software development (2377) Program Management Activities (820) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> Continue NTDR Program (5096) Program Management Activities (910) 		
<p>ACQUISITION STRATEGY FOR PROJECT D370: The EPLRS System Improvement Program (SIP) is designed to significantly reduce the cost of the radio. A sole source contract was awarded to Hughes Aircraft in Sep 94. The NTDR program will follow a Non-Development Item (NDI) approach with an RDTE contract award scheduled for Nov 95 with an option award scheduled for 1 QTR FY 97.</p>		
<p>Project D2QT - EPLRS/JTIDS Operational Test: This project finances the direct costs of planning and conducting operational testing and evaluation of the Enhanced Position Location Reporting System (EPLRS)/Joint Tactical Information Distribution System (JTIDS) by the Operation Test and Evaluation Command (OPTEC). JTIDS is an Acquisition Category (ACAT) I system with an Initial Operational Test and Evaluation (IOTE) beginning in 1 QTR FY 97. Operational Testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2QT is restructured from within this PE (PE 0603713A) and is not a new start.</p>		
FY 1994 Accomplishments: Project not funded		
FY 1995 Planned Program: Project not funded		
FY 1996 Planned Program: <ul style="list-style-type: none"> JTIDS IOTE testing (517) JTIDS IOTE evaluation (150) Player unit support of IOTE (30) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		DATE
4 - Demonstration And Validation		February 1995
PE NUMBER AND TITLE		
0603713A ADDS-Army Data Distribution System		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> • JTIDS IOTE testing (3220) • JTIDS IOTE evaluation (341) • Player unit support of IOTE (220) 		
B. Program Change Summary		
Previous President's Budget		
FY 1994	FY 1995	FY 1996
19647	5587	0
19647	5399	-
-291		-
19356	5399	6694
		9787
Adjustments to Appropriated Value		
a. SBIR/STTR decrement (-291)		
Current President's Budget Submit		

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603713A ADDS-Army Data Distribution System

PROJECT

D370

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
JTIDS/EPLRS (Formerly known as PJH-PLRS/JTIDS Hybrid)	19356	5399	5997	6006	6005	0	0	0	36800	

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl Cont	Total Cost Cont
Other Procurement-2, Army, SSN:BU1400	36978	9490	19968	10331	9843	51704	54683	54691		

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
Completed CL2M RDT	1	4	4	4
EPLRS SIP Award	X*			
Complete CL2M LUT		X*		
LRIP decision for CL2M terminals		X		
NTDR Award			X	
Complete NCS-E(D) OT			X	
NCS (D)			X	
Initiate JTIDS CL2M IO TE				X
Complete JTIDS CL2M IO TE				X
NTDR Option Award				X

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Item 53

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995	PROJECT	
BUDGET ACTIVITY		PE NUMBER AND TITLE								0603713A ADDS-Army Data Distribution System			D370
4 - Demonstration And Validation													
A. Project Cost Breakdown													
Contractor Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997								
Program Management Support		15587	3442	2377	5096								
Miscellaneous		2995	1957	820	910								
Total		774	0	2800	0								
		19356	5399	5997	6006								
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Contractor or Government	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program		
Product Development Organizations													
Hughes Aircraft	SS/CPFF	SEP 92	183364	183364	181500	1864	0	0	0	0	183364		
Fullerton, CA													
Hughes Aircraft	SS/CPFF	SEP 94	17988	17988	0	3100	0	0	0	0	3100		
Fullerton, CA													
GEC-MARCONI	SS/CPFF	NOV 93	21440	21440	21293	147	0	0	0	0	21440		
Little Falls, NJ													
TOAD	MIPR	JUN 92	25600	25600	25600	0	0	0	0	0	25600		
Tobyhanna, PA													
UNISYS Corp	MIPR	MAR 94	3833	3833	1940	1893	0	0	0	0	3833		
St. Paul, MN													
UNISYS Corp	MIPR	MAY 94	1424	1424	0	1424	0	0	0	0	1424		
St. Paul, MN													
TBD	C/FFP	NOV 95	TBD	32000	0	0	0	2377	5096	32100	39573		
Miscellaneous								3620	910	4700	21148		
Support and Management Organizations													
Miscellaneous								0	0	0	11648		
Test and Evaluation Organizations													
TEXCOM/EPG	MIPR	MAY 94	19539	19539	17802	1737	0	0	0	0	19539		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603713A ADDS-Army Data Distribution System

PROJECT

D370

Government Furnished Property

Contract

Item Description	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property				9120	774	0	0	0	0	9894
Miscellaneous	REQN/WR/MI PR									
Support and Management Property: None										
Test and Evaluation Property: None										
Subtotal Product Development				239453	16453	4667	5997	6006	36800	309376
Subtotal Support and Management				9750	1166	732				11648
Subtotal Test and Evaluation				17802	1737		5997	6006		19539
Total Project				267005	19356	5399			36800	340563

Method/Type

or Funding

Vehicle

Property

REQN/WR/MI

PR

Support and Management Property: None

Test and Evaluation Property: None

Total

Prior to

FY 1994

239453

16453

9750

17802

267005

FY 1995

4667

732

5399

FY 1996

5997

5997

FY 1997

6006

6006

Budget to

Complete

36800

Total

Program

309376

11648

19539

340563

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE _____

February 1995

BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603713A ADDS-Army Data Distribution System

PROJECT

D2QT

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
EPLRS/JTIDS OPER TEST	0	0	697	3781	0	0	0	0	0	

C. Other Program Funding Summary:	N/A
-----------------------------------	-----

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
Initiate JTIDS IOTE	1	4	4	4
Complete JTIDS IOTE	2	1	2	2
	3	3	3	3
			X	X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995	PROJECT	
BUDGET ACTIVITY		PE NUMBER AND TITLE								0603713A ADDS-Army Data Distribution System			D2QT
4 - Demonstration And Validation													
A. Project Cost Breakdown													
Operational Test and Evaluation		FY 1994	FY 1995	FY 1996	FY 1997								
Total				697	3781								
				697	3781								
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Contractor or	Contract												
Government	Method/Type												
Performing	or Funding												
Activity	Vehicle												
Product Development Organizations: N/A													
Support and Management Organizations: N/A													
Test and Evaluation Organizations													
OPTEC	MIPR												
Ft. Bliss, TX													
Government Furnished Property: None													
Subtotal Product Development													
Subtotal Support and Management													
Subtotal Test and Evaluation													
Total Project													
		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
				697	3781	0	4478						
				697	3781	0	4478						
				697	3781	0	4478						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603730A Tactical Surveillance System - Advanced Development (TIARA)								D560	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D560 Tactical Surveillance System - Adv Dev		15140	11717	0	0	0	0	0	0	0	N/A
<p>A. Mission Description and Budget Item Justification: This project supports advanced development work directed at meeting the deep intelligence and targeting needs of tactical commanders, as stated in Field Manual 100-5 and under Airland Battle tactics, to fight out-numbered and win. Specific tactical imagery exploitation engineering and development efforts are under the auspices of Army's Tactical Exploitation of National Capabilities (TENCAP) program and include advanced development engineering of Tactical Exploitation System (TES), advanced communication technologies and processing requirements for new National sensors, prototyping efforts for Hybrid Optical Automatic Target Recognition (HOATR) image processing. This Program Element (PE) focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of TENCAP and is correctly placed in Budget Activity 4.</p> <p>Project D560 - Tactical Surveillance System Advanced Development: HOATR is being developed to meet the need to rapidly exploit an exponentially increasing volume of imagery while decreasing system size and cost, as well as lowering manning requirements. HOATR is directly applicable to the Enhanced Tactical Radar Correlator (ETRAC) and the Modernized Imagery Exploitation Systems (MIES). The Army's emerging TES will incorporate the standards and protocols dictated by the Common Imagery Ground Surface System (CIGSS) program. TES, as a system, brings all of the existing and emerging Army TENCAP capabilities (EPDS, MIES, and ETRAC) into an integrated common baseline; downsized, modular and scalable to meet a wide range of contingency requirements. TENCAP Common Baseline (which incorporates HOATR and Secondary Imagery Dissemination (SID)) addresses common subsystems, planned improvements, key activities and ongoing planned initiatives determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program (DARP) (PE 0305154D)). In FY94, this Program Element also provided advanced development efforts to the MIES and the ETRAC, and program support to the Joint Services Imagery Processing System (JSIPS). In FY 95, development efforts for MIES, ETRAC and JSIPS program support were moved to PE 0305154D, (DARP). In a parallel action, the support efforts remaining in this PE were consolidated with Project D907 beginning in FY 96. Further details may be found in the Tactical Intelligence and Related Activities (TIARA) Congressional Justification Book, Volume II, and the TENCAP Master Plan.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Initiated development of the Triband Satellite System (TSS), a multi-band communication terminal supporting tactical imagery dissemination. (1614) Continued development of HOATR. (1827) Continued development of imagery processing algorithms and DoD Common SAR Processor (CSARP) for ETRAC. (3757) Continued joint support within JSIPS program. (1750) Continued SID and low volume tactical terminals studies. (643) Initiated development of third MIES. (1117) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
4 - Demonstration And Validation	0603730A Tactical Surveillance System - Advanced Development (TIARA)	D560	
<ul style="list-style-type: none"> Continued support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace), U.S. Topographic Engineering Center (TEC) support, U.S. Army Space Program Office (ASPO) support and Contractor Systems Engineering and Technology Assistance (SETA) support. The cost identified here also supports development efforts funded under PE 0604740A, D662 in FY94 and PE 0305154D, P531 in FY 95. (4432) 			
FY 1995 Planned Program:			
<ul style="list-style-type: none"> Upgrade ETRAC with multi-sensor capability as initial step in development of TES. (Effort funded under PE 0603766 in FY 96.) (2770) Complete development of HOATR (Test Prototype). (3000) Continue support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace), TEC support, ASPO support and SETA support. (Effort funded under PE 0603766 in FY 96.) (1373) Continue support to efforts being developed (ETRAC and MES) under PE 0305154D (DARP) ((e.g., FFRDC (Aerospace), TEC support, ASPO support and Contractor SETA support. (4338) Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (236) 			
FY 1996 Planned Program:			
<ul style="list-style-type: none"> All effort in this project transferred/consolidated under PE 0603766 (Project D907), Tactical Electronic Surveillance System-Adv Dev 			
B. <u>Program Change Summary</u>			
Previous President's Budget	FY 1994	FY 1995	FY 1996
Appropriated Value	15371	11870	11693
Adjustments to Appropriated Value (SBIR/STTR Decrement)	15371	11717	10869
Current Budget Submit/President's Budget	231		
	15140	11717	0
			0

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603730A Tactical Surveillance System -
Advanced Development (TIARA)

PROJECT
D560

Change Summary Explanation:

Funding: IN FY 96, THE ARMY CONSOLIDATED THE REMAINING PE'S SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATIONAL CAPABILITIES (TENCAP) PROGRAM. PE 0603730A/PROJECT D560 WAS CONSOLIDATED WITH PE 0603766A/PROJECT D907 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION, PE 0604740A/PROJECT D662 WAS CONSOLIDATED WITH PE 0604766A/PROJECT D909 IN FY 96 AND BEYOND. These PE's/Projects were consolidated because in FY 95 all funds directly related to the development of MIES and ETRAC, and support to the JSIPS program that were previously funded in Project D560 and D662 in FY94 were moved to OSD PE 0305154D, DARP. Even though the funds have been moved to the Defense Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding to support these DARO efforts (ASPO salaries and expenses, TEC, FFRDC, Contractor SETA) and advanced development of TES and communications technologies common to all TENCAP systems remain in this PE and are still required.

Schedule: None

Technical: None

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To Compl	Total Cost
RDTE, A Budget Activity 4 PE 0603766A Project D907 TENCAP-AdvDev	15069	14815	28369	26913	23935	28057	29377	34319	Cont	Cont
RDTE, A Budget Activity 5 PE 0604740A Project D662 Tact Surv Sys - Eng Dev	37534	2093	0	0	0	0	0	0		
PE 0604766A Project D909 TENCAP - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28533	Cont	Cont

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603730A Tactical Surveillance System -

Advanced Development (TIARA)

PROJECT

D560

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, DW Budget Activity 7										
PE 0305154D Project P531										
DARP	0	40017	33833	37216	12390	6328	6328	6328	Cont	Cont
Other Procurement Army, OPA - 2										
BZ 7315 TENCAP	7729	4636	4617	1807	1784	1853	4971	14916	Cont	Cont
BA 0329 DARP	1927	2411	0	0	0	0	0	0	Cont	Cont
Procurement, Defense Wide										
0305154D, DARP	0	0	88700	123400	77900	69100	71400	73300	Cont	Cont
D. <u>Schedule Profile</u>										
	FY 1994		FY 1995			FY 1996		FY 1997		
1	2	3	4	1	2	3	4	1	2	3
										4
Award TSS Contract	X									
Complete Development and Field TSS				X						
Test Prototype ATR				X						
Initiate Adv Dev of TES			X							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)			DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT	
4 - Demonstration And Validation	0603730A Tactical Surveillance System - Advanced Development (TIARA)		D560	
A. Project Cost Breakdown				
	FY 1994	FY 1995	FY 1996	FY 1997
System Development				
TES	0	2770	See Proj D907	See Proj D907
MIES (*1)	2731	*		
ETRAC(*1)	3757	*		
Common Baseline (*2, *3)	2470	3000	See Proj D907	See Proj D907
Sub-Total Sys Dev	8958	5770		
Program Management				
ASPO In-House (*2)	1207	1207	See Proj D907	See Proj D907
FFRDC (*2)	430	518	See Proj D907	See Proj D907
Systems Engineering (Contractor) (*1, *2, *4)	3995	3222	See Proj D907	See Proj D907
Systems Engineering (Government) (*2)	550	1000	See Proj D907	See Proj D907
Sub-Total Program Management	6182	5947		
Total	15140	11717	0	0
(*1) In FY 95, all development efforts for these systems moved to PE 0305154D (DARP), Project D531				
(*2) In FY 96 and beyond, this PE/Project is consolidated under PE 0603766A (TENCAP - Adv Dev), Project D907 (Tactical Electronic Surveillance System - Adv Dev).				
(*3) TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems, including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program (PE 0305154D).				
(*4) In FY94, \$1.8M of this line funds Army's Share support to JSIPS Program Office (JPO) to support the ongoing JSIPS Program. This effort moved to PE 0305154D (DARP), Project P531 in FY 95.				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE		February 1995		PROJECT	
BUDGET ACTIVITY		PE NUMBER AND TITLE				0603730A Tactical Surveillance System - Advanced Development (TIARA)					
4 - Demonstration And Validation											
B. Budget Acquisition History and Planning Information											
Performing Organizations											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
TEC (MIES)	MIPR	4Q94	N/A	N/A	N/A	1117	*	*	*	*	
Classified	MIPR	3Q93	N/A	N/A	5320	3757	*	*	*	*	
(ETRAC)											
MICOM(Cmn	MIPR	3Q94	N/A	N/A	N/A	1827	3000	**	**	**	
Bsln)											
Classified (Cmn	MIPR	1Q94	N/A	N/A	N/A	643	0	0	0	0	
Bsln)											
Classified (TES)	MIPR	2Q95	N/A	N/A	N/A	0	2770	**	**	**	
Support and Management Organizations											
ESC (JSIPS Sys	MIPR	4Q94	N/A	N/A	N/A	1750	*	*	*	*	
Eng Cont)											
Classified (Sys	MIPR	1Q EA FY	N/A	N/A	N/A	2245	3222	**	**	**	
Eng Cont)											
USASPO	In-House	N/A	N/A	N/A	N/A	1207	1207	**	**	**	
SSD/FDEA	MIPR	1Q EA FY	N/A	N/A	N/A	430	518	**	**	**	
(FFRDC)											
TEC (Sys Eng	MIPR	1Q EA FY	N/A	N/A	N/A	550	1000	**	**	**	
Govt)											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY			PE NUMBER AND TITLE			DATE		PROJECT	
4 - Demonstration And Validation			0603730A Tactical Surveillance System - Advanced Development (TIARA)			February 1995		D560	
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
Test and Evaluation Organizations									
Government Furnished Property									
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Total Budget to Complete Program
Product Development Property									
Triband SATCOM Subsystem (TSS) (MIES)	MIPR	3Q94	3Q95	0	1614	0	0	0	1614
Subtotal Product Development				N/A	7344	5770	**	**	
Subtotal Support and Management				N/A	6182	5947	**	**	
Subtotal Test and Evaluation				0	0	0	0	0	
Subtotal Government Furnished Property				N/A	1614	0	0	0	
Total Project				N/A	15140	11717	**	**	

* See PE 0305154, P531

** See PE 0603766A, D907

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									PROJECT
4 - Demonstration And Validation		0603745A Tactical Electronic Support Systems - Advanced Development (TIARA)									D535
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D535 Intelligence Fusion Analysis Demonstration		4286	1695	2937	2096	0	0	0	0	0	17261

A. Mission Description and Budget Item Justification
 This Program Element funds application and validation of advanced computer software and hardware technologies to intelligence fusion analysis functions and prototype development, integration and evaluation of improved tactical intelligence fusion capabilities. This project supports the urgent requirement for an automated tactical intelligence processing system through technology insertion into, and development and evaluation of, prototype upgrades to the All Source Analysis System (ASAS), both during development and after fielding and is appropriately funded in Budget Activity 4.

Project D535 - Intelligence Fusion Analysis Demonstration.

FY 1994 Program Accomplishments:

- Completed basic prototypes of high-performance, parallel processor based terrain analysis and data fusion servers; initiated evaluation and configuration of techbase prototypes for terrain analysis, advanced correlation, asset management, situation assessment and templating capabilities for use as/incorporation into ASAS operational prototypes; expanded capabilities of techbase prototypes, to include image processing, support to collection management and Human Interest (HUMINT) analysis. (696)
- Continued to support the general development, integration and evaluation of operational prototypes of functional and performance upgrades to ASAS in accordance with the US Army Intelligence Center and School/PEO-CCS/USAREUR Joint Prototyping Plan; continued to integrate and evaluate advanced fusion technology applications to ASAS at the Tactical Intelligence Fusion Test Bed. (2000)
- Supported the completion of development, integration and evaluation of operational prototypes to upgrade:
 - (1) the selection, transformation and dissemination of ASAS intelligence fusion products to other command and control systems
 - (2) the reception and incorporation of other command and control systems' products and information into ASAS intelligence fusion operations. (1600)

FY 1995 Planned Program:

- Continue to expand and improve the capabilities and performance of the techbase prototypes to include dynamic situation change prediction, expanded collection management support/synchronization, matrix generation, advanced image processing, incorporation of terrain and mobility analysis techniques in automated correlation, and tailored support to intelligence analysis in low intensity conflicts and operations other than war. (494)
- Continue to evaluate and configure techbase prototype situation display/assessment, collection management support and HUMINT/Counter-Intelligence analysis support capabilities for employment as/integration into operational prototypes of ASAS functions for user evaluation and feedback. (294)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
4 - Demonstration And Validation	0603745A Tactical Electronic Support Systems - Advanced Development (TIARA)	
<ul style="list-style-type: none"> Continue to support the development, integration, evaluation and refinement (based on user feedback) of operational prototypes of functional and performance improvements to ASAS per the Joint Prototyping Plan. (871) Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (36) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> Continue to investigate, develop and apply advanced technologies (neural net software and hardware, large-screen displays, parallel/distributed processing and database techniques, improved storage media) to intelligence fusion techbase prototypes for expanded capabilities and performance in the areas of dynamic situation development, assessment and prediction; intelligence collection planning, management, and evaluation; advanced intelligence analysis and correlation tools for low- and high-intensity conflict situations and operations other than war. (875) Continue to evaluate, configure and integrate the above high-performance, expanded techbase prototype capabilities into operational ASAS prototypes. (647) Continue to support the development, evaluation and refinement of operational prototypes of functional and performance upgrades/improvements to ASAS and their integration into mainline ASAS development and acquisition per the Joint Prototyping Plan. (1415) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Continue to investigate, develop and apply advanced software and hardware processing, storage, display and Input/Output (I/O) technologies to techbase prototypes of high-performance, expanded intelligence fusion capabilities. (546) Continue to evaluate, configure and integrate techbase prototype capabilities into operational ASAS prototypes. (552) Continue to support the development, evaluation and refinement of ASAS operational prototypes and their integration into mainline ASAS development and acquisition per the Joint Prototyping Plan. (998) 		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1995
Appropriated Value	4363	1718
Adjustments to Appropriated Value	4363	1695
SBIR/STTR decrement (-67)	-67	
Current President's Budget	4296	1695
		2937
		2106
		2096

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

**0603745A Tactical Electronic Support Systems -
Advanced Development (TIARA)**

PROJECT

D535

Change Summary Explanation (By Project):

Project D535 - Intelligence Fusion Analysis Demonstration

Funding: None

Schedule: None

Technical: None

C. Other Program Funding Summary

Not Applicable

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Total To Compl.
--	---------	---------	---------	---------	---------	---------	---------	---------	--------------------

D. Schedule Profile

	1	2	3	4	1
Deliver Basic Terrain Analysis Prototypes					
Deliver Basic Asset Mgmt Techbase Prototypes					
Integrate Asset Mgmt into ASAS BL II Prototypes					
Integrate Adv Sit Assmt into ASAS Operational Prototype					
Integrate HUMINT Anal Spt into ASAS Operational Prototype					
Incorporate Adv Correlation Techniques into ASAS Operational Prototypes					
Apply Adv Processing Tech into Techbase Prototypes					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995		
BUDGET ACTIVITY		PE NUMBER AND TITLE											
4 - Demonstration And Validation		0603745A Tactical Electronic Support Systems - Advanced Development (TIARA)											
		FY 1994			FY 1995			FY 1996			FY 1997		
		1	2	3	4	1	2	3	4	1	2	3	4
Integrate Exp Techbase Capabilities into ASAS Operational Prototypes													
Apply Adv Tech to Techbase Prototypes													X
Integrate Exp Techbase Capabilities into Operational ASAS Prototypes													X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995			
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT				
4 - Demonstration And Validation		0603745A Tactical Electronic Support Systems - Advanced Development (TIARA)			D535				
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total					
				Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete
Support and Management Property									
Test and Evaluation Property									
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project				6237	4296	2096	17261		
*SBIR/STTR (36)				6237	4296	*1695	2096		
				FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
				6237	4296	2937	2096		17261
						1695			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603747A Soldier Support/Survivability

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	11720	11638	33848	16481	9105	8596	9731	9470	Continuing	Continuing
DC09 Unit/Organizational Equipment	2617	1976	2241	1362	2891	1939	1597	1565	Continuing	Continuing
D603 Enhanced Land Warrior	0	5458	25935	9453	0	0	0	0	0	0
D610 Food Advanced Development	2294	2142	2162	2135	2511	2680	3497	3791	Continuing	Continuing
D669 Clothing and Equipment	6809	2080	3510	3531	3703	3777	4637	4114	Continuing	Continuing

A. Mission Description and Budget Item Justification Provide advanced development for unit/organizational equipment, improved individual clothing and equipment, fabric shelters, food, food and field service equipment which will enhance soldier battlefield effectiveness, survivability, sustainment and quality of life. Program element supports advanced development of a new generation of field service support items and shelters, including collective protection and shelter heaters for unit/organizational use. Program element also supports advanced development of individual clothing and equipment items to lighten the soldier's load and incorporate protection against chemical and biological agents, thermal nuclear flash, ballistic threats, visual and electronic detection and environmental hazards. Enhanced Land Warrior supports advanced development of the first fully integrated and digitized combat soldier system. The projects in this Program Element support research efforts in the Demonstration and Validation phases of the acquisition strategy and are therefore correctly placed in Budget Activity 4.

Project DC09 - Unit/Organizational Equipment Advanced Development: Develop and field soft shelters, showers, latrines and heaters to improve unit sustainability and combat effectiveness.

FY 1994 Accomplishments:

- Completed advanced development and transitioned the 35k British Thermal Unit-Heat (BTUH) Space Heater Convective (SHC) to Engineering and Manufacturing Development. (440)
- Fabricated developmental prototypes for the 10k BTUH Space Heater Small (SHS) and Space Heater Arctic (SHA). (320)
- Performed market investigation and fabricated Lightweight Maintenance Tent prototypes for field unit evaluation. (164)
- Initiated market investigation and fabricated Modular Ammunition Solar Shade (MASS) test prototypes for evaluation at the Ordnance Missile Munitions School and Center and the National Training Center (NTC). (180)
- Shipped 160 MASS Covers to Somalia for general purpose solar protection and evaluation. (13)
- Completed contractor development of prototype Laundry and Drycleaning System (LADS). (1500)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
4 - Demonstration And Validation		
PE NUMBER AND TITLE		
0603747A Soldier Support/Survivability		
FY 1995 Planned Program:		
<ul style="list-style-type: none"> Complete design and initiate testing of Quarter Acre and Ammo Solar Shades. (267) Complete redesign of the Lightweight Maintenance Enclosure and procure prototypes. (603) Complete market investigation and Integrated Program Summary (IPS) for the Ballistic Protective System. (149) Conduct contractor testing and redesign of the Laundry and Dry Cleaning System (LADS). (293) Complete Dem/Val of the Space Heater Convective (SHC) and the Space Heater Arctic (SHA) and transition to Engineering and Manufacturing Development. (243) Conduct market investigation, build prototypes, test and transition to Engineering and Manufacturing Development the Containerized Self Service Laundry. (379) SBIR/STTR Adjustment (42) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> Complete development and type classify Ammo Solar Shade and procure Quarter Acre Solar Shade prototypes. (371) Procure test prototypes for the Ballistic Protective System and transition to Engineering and Manufacturing Development. (220) Complete technical testing of the Lightweight Maintenance Enclosure and transition to Engineering and Manufacturing Development. (550) Build three second generation LADS for Technical Testing/Operational Testing (TT/OT). (962) Complete development of the SHS and transition to Engineering and Manufacturing Development. (138) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Complete development and type classify the Quarter Acre Solar Shade. (233) Complete LADS prototype systems and initiate TT/OT. (1129) 		
<p>D603 - Enhanced Land Warrior: The Enhanced Land Warrior (ELW) program strategy is structured for the continuous modernization of all soldiers. Land Warrior (LW) for dismounted combat soldiers is the lead program and the technology carrier for the ELW program. LW is a first generation, integrated soldier system for dismounted combat soldiers. LW program is focused to keep pace with the Army Digitization effort and is critical to the digitization of the soldier system to support the Force XXI Concept and the Chief of Staff of the Army's initiative to field an operational digitized force by the year 2000. LW will incorporate mature technologies demonstrated in the Soldier Integrated Protective Ensemble (SIPE) and other RDT&E capabilities by government and industry. LW will enhance the dismounted infantryman's lethality, command and control, mobility, sustainment and survivability. The program encompasses everything the soldier wears or carries for individual use. The backbone of LW will be the radio/computer/Global Positioning System (GPS) and the head mounted display. The LW program will leverage Nondevelopmental Items (NDI) components, whenever possible, to provide state-of-the-art digitized technology. LW will also incorporate/integrate equipment from ongoing RDA programs, where appropriate. Less mature technologies not available for acquisition in LW will be demonstrated in the 21st Century Land Warrior (21CLW) Top Level Demonstration (TLD) and then transition to 21CLW development.</p>		
FY 1994 Accomplishments:		
<ul style="list-style-type: none"> Project not established until FY 95. Work performed under D669 in FY94 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
4 - Demonstration And Validation	0603747A Soldier Support/Survivability	
FY 1995 Planned Program:		
<ul style="list-style-type: none"> Complete engineering analysis, complete Request for Proposal (RFP), and conduct Source Selection for LW Contract Award. (3694) Preliminary Design of Land Warrior System and Land Warrior contract award (1500) Support Battlelab Advanced Warfighting Experiment (AWE) - Warrior Focus. (150) SBIR/STTR Adjustment (114) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> Buy prototype components of Helmet Mounted Display, Digital Radio, Voice Soldier Radio and Lightweight Leader Computers and integrate for squad to company size Early User experimentation and conduct EOE testing for LW program. (2800) Complete LW system hardware/software design and integration; conduct contractor testing of components and technical reviews. (18750) Program management: scheduling, program controls, program documentation, and review of performance, cost and schedule. (1800) Buy long lead items for LW Development Test (DT). (300) Review of LW contractor's performance, to include system analysis, government configuration management, software verification, and logistics support (matrix support from 12 organizations). (2285) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Fabricate LW prototypes for DT. (5000) Support Brigade 96 AWE and company size FDTE for LW. (3500) Program management and government oversight of effort. (953) 		
<p>Project D610 - Food Advanced Development: Development of Joint Service Food/Food Service Equipment to improve individual combat effectiveness and reduce logistics burden and O&S costs of subsistence support for servicemen and women. Enhance rations by increasing quality, acceptability and variety. Develop multi-fuel, rapidly deployable field food service equipment to support combat, humanitarian missions and operations-other-than-war. Improve equipment to enhance safety in food service, utilize battlefield fuel and decrease fuel and water requirements. Program is reviewed and validated twice annually by the DoD Food and Nutrition Research and Engineering Board as part of the Joint Service Food Program. Conduct Advanced Development of improved subsistence and subsistence support items to enhance soldier effectiveness and quality of life in all four Services as part of an integrated DOD Food Research, Development, Test, Evaluation and Engineering (RDTE&E) program.</p>		
FY 1994 Accomplishments:		
<ul style="list-style-type: none"> Procurement documents were transitioned to Defense Personnel Supply Center for the Unitized Group Ration (UGR) which simplifies logistics and integrates heat and serve meals, and meals prepared by cooks, that were developed, field tested, and independently validated. (466) Initiated design and development of improved field food service refrigeration to eliminate ozone depleting chemicals, and awarded contracts for the development of prototype powered multi-fuel burner for field food preparation that will improve operational efficiency, sustainment capability and safety by replacing gasoline fueled burners. (510) Evaluated NDI components of a galley system designed for extended operations aboard Navy P-3 sub-chaser aircraft. (168) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603747A Soldier Support/Survivability	
<ul style="list-style-type: none"> Conducted market survey and user survey to evaluate capability requirements for Army Field Feeding System - Future for soldiers operating in extreme cold environments. (185) Assembled Long Range Patrol prototype with vacuum pack entrees and conducted focus group evaluations with Special Operations Forces troops. (320) Developed and tested new recipes for the Armed Forces Recipe Service. Developed a nutritional labeling concept in conjunction with Office of The Surgeon General that complies with current Food and Drug Administration/United States Department of Agriculture labeling regulations and developed a prototype nutrition insert for inclusion in operational rations. (645) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> Conduct user test/evaluation of prototype powered multi-fuel burners and improved field food service refrigeration, and transition multi-fuel burner to engineering development. (570) Complete development and transition Technical Data Package (TDP) for UGR and Joint Service nutritional labeling to the Defense Logistics Agency for procurement and fielding. (160) Complete development and transition improved Long Range Patrol Ration, improved Tray Pack Ration and improved Cold Weather Ration to procurement. (651) Complete test and evaluation of galley improvements aboard Navy P-3 sub-chaser aircraft and transition to Navy for production. (180) Complete preliminary automation requirements to automate the Joint Service Recipe System to eliminate duplication of efforts between Services and provide real time recipe revisions and nutritional analyses to field activities. (475) Evaluate new and modified equipment components of the Army Field Feeding System-Future to provide improved food service operations and performance in cold and extreme cold environments. (61) SBIR/STTR Adjustment (45) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> Conduct user evaluation of hardware/software developed to automate the Joint Service Recipe System. (703) Complete design and transition TDP for improved field food service refrigeration to procurement. (150) Develop, conduct user evaluations, and transition Tray Pack and Meal-Ready-To-Eat improvements to procurement. (609) Conduct user tests of new self-heating group ration to increase readiness, ease logistical burden, reduce labor and decrease costs. (312) Conduct market and user surveys of biodegradable packaging for operational subsistence. (95) Conduct user tests of new self-heating individual ration that will increase convenience, consumption, and field troop quality of life. (293) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> Transition first generation automated system for the Joint Service Recipe System to the service's field activities. (431) Develop, conduct user evaluations, and transition Tray Pack and Meal-Ready-to-Eat improvements to procurement. (657) Conduct user tests of self-heating group ration. (250) Conduct user evaluations of biodegradable materials for ration packaging. (383) Conduct user tests of a new self heating individual ration. (315) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603747A Soldier Support/Survivability	
<ul style="list-style-type: none"> • Initiate design/development of prototype compactor/pulper for field food service use to reduce back-haul and trash burial requirements. (99) 		
<p>Project D669 - Clothing and Equipment: Uses state-of-the-art technology to develop improved clothing and individual equipment items to enhance the effectiveness, lethality, sustainability, survivability and quality of life of the individual soldier.</p>		
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Prepared program documentation and achieved Milestone I Program Decision for Land Warrior (1500) • Completed Concept Formulation Process for Land Warrior. (800) • Prepare Draft Land Warrior Request for Proposal for FY 95 release. (1538) • Modified requirements, program management plans, and test plans for the Microclimate Cooling Air Vest (to support PM-Aircrew Life Support Equipment) from cooled air to cooled liquid vest per change in Joint Service requirements). (57) • Held In-process Review of proponentcy, requirements, technology and initial design concepts for the Individual Microclimate Cooling System; conducted Red Team survey and analysis of potential Army applications; provided demo to potential users. (642) • Reviewed data for flechette and fragment protection of the Multiple Threat Body Armor (MTBA); reviewed results of Front End Analysis for a Modular Body Armor (MBA) system; determined that MTBA requirements would be met in a new MBA requirement. (46) • Procured test items and initiated DT/OT of the Self-Contained-1, Toxic Environment Protective Outfit (STEPO). Following Phase I of DT/OT, made decision to correct equipment problems before proceeding with Phase II DT/OT. Awarded contract for fixes. (2226) 		
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Assist TRADOC in revising requirements documents for the Individual Microclimate Cooling System, using Red Team survey and demonstration to potential users. (150) • Complete modifications of the Self-Contained Toxic Environment Protective Outfit (STEPO) test items, conduct equipment prove-out, conduct New Equipment Training, and complete Phase II DT/OT. (1839) • PM Aircrew Life Support Equipment is funding Liquid Microclimate Cooling Vest. • Reprogramming. (28) • SBIR/STTR Adjustment (43) 		
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Individual Microclimate Cooling System (revised requirement), Advanced Personal System for Ground Troops (PASGT) Helmet, Advanced Explosive Ordnance Disposal (EOD) Suit, Special Protective Eyewear Cylindrical System (SPECS) P31. (3210) • Complete test assessment reports, type classify, complete Technical Data Package and transition to production: STEPO. (300) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603747A Soldier Support/Survivability		
FY 1997 Planned Program:			
<ul style="list-style-type: none"> Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Variable Battledress Uniform, Heat Pipe Heating System, Reversible Absorption Microclimate Cooling System, Technologies to support a 21st Century STEPO. (1411) Procure test items and initiate and/or complete DT/OT I: Advanced PASGT Helmet, Advanced EOD Suit, SPECS P3I. (2120) 			
B. Program Change Summary:			
Previous President's Budget	FY 1994	FY 1995	FY 1996
Appropriated Value	13176	11795	11869
Adjustments to Appropriated Value	13176	11636	
a. SBIR/STTR (-204)	-1456		
b. Reprogramming total (-1252)			
Current Budget Submit/President's Budget	11720	11636	33848
			16481
<p>Funding: Increase in FY 96 and FY 97 to support new Project D603 for the Land Warrior (LW) program. Program was not fully structured until after the completion of Milestone I/II in August 1994, and was then funded during the FY 96-01 POM development cycle. Funding provides for the completion of LW hardware/software design and integration, fabrication/procurement of prototypes and the conduct of Early Operational Experimentation(EOE) and Development Testing.</p> <p>Schedule: Unchanged, but is contingent upon receipt of FY 96/97 funding.</p> <p>Technical: Unchanged</p>			

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February 1995

PE NUMBER AND TITLE

0603747A Soldier Support/Survivability

DC09

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC08 Unit/Organizational Equipment	2817	1978	2241	1382	2891	1939	1597	1565	Continuing	Continuing

C. Other Programs' Finding Summary

OPA3 LADS-SSN M86200

D. Schedule Profile

Completed contractor development of prototype LADS
Completed advanced development of 35k BTUH Space Heater Convective (SHC)
Complete demonstration/validation of SHC and Space Heater Arctic (SHA)
Complete redesign of Lightweight Maintenance Tent
Type Classify Solar Shade Ammunition Covers
Type Classify Quarter Acre Solar Shade
Complete LADS prototype systems and initiate TT/OT

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
February 1995

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration And Validation	0603747A Soldier Support/Survivability	DC09

A. Project Cost Breakdown

Primary Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997	
Total	2617	1976	2241	1362	
	2617	1976	2241	1362	

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Contract

Government Method/Type Award or Performing Activity

Performing or Funding Obligation Date

Activity Vehicle

Product Development Organizations

Chemfab, Hunter Mfg, Atlantic

Research Guild Assoc, Army

Research Lab, Graniteville,

Milliken, General Technical

Services

Support and Management Organizations

Soldier Systems Command

Test and Evaluation Organizations

TECOM

* DC09 Program line is ongoing in nature, and is made up of multiple projects which are on separate project schedules, as a result, the EAC, Budget to Complete and

Total Program Categories are not applicable to DC09.

Government Furnished Property: N/A

Total

Prior to

FY 1994

10230

Subtotal Product Development

Subtotal Support and Management

Subtotal Test and Evaluation

Total Project

Project Office

EAC

N/A*

10230

FY 1994

2352

1711

1781

1187

Cont

1000

250

115

200

Cont

2000

15

150

260

75

Cont

2617

1976

2241

1362

Cont

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603747A Soldier Support/Survivability

PROJECT

D603

COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D603	Enhanced Land Warrior	0	5458	25935	9453	0	0	0	0	0	0

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To Compl	Total Cost
RDTE, A Budget Activity 5 PE 0604713A										
RDTE, A Budget Activity 4 PE 0603747A/D669		496		52239	34761	23610	18129	25496		5864
OPA3, M80500 Enhanced Land Warrior	3768*								131022	299147
WTCV, GZ2800 Mod Wpn Sys (M16/M203)	2024	639	2842	5767	8081	7559	52479	63304		26912
WTCV, GB3007 Mod Wpn Sys - M4 Carbine Mod			930	2206	2287	2524				7947

•Note: Land Warrior was a portion of Project D669 within PE 0603747A.

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
ORD Approved Milestone I/II Decision	1 2 3 X*	4 1 2 3	4 1 2 3	4 2 3
Contract Award	X*	X		
Fabricate Development Test Prototypes			X	X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603747A Soldier Support/Survivability	February 1995	D603

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997	
System Engineering/Program Management		5194	22835	953	
System Test and Evaluation			2800	3500	
Prototype Development and Manufacturing		150	300	5000	
SBIR/STTR Reductions		114			
Total		5458	25935	9453	

B. Budget Acquisition History and Planning Information**Performing Organizations**

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
--	--------------------------------	--------------------------	-------------------------	--------------------	------------------------	---------	---------	---------	---------	--------------------	---------------

Product Development Organizations

To be determined

Support and Management Organizations

Soldier Systems Command

Test and Evaluation Organizations

To be determined

Government Furnished Property

Contract

Item Description	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property										
Thermal Weapons Sight				800	600	60				1360
Support and Management Property: None										
Test and Evaluation Property: To be determined										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603747A Soldier Support/Survivability

Total

**Prior to
FY 1994**

FY 1994
600

FY 1995 **60**

FY 1996

FY 1997

Budget to Complete

Total	1360
<u>Program</u>	

Subtotal Product Development
Subtotal Support and Management
Subtotal Test and Evaluation
Total Project

008

600

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT			
4 - Demonstration And Validation		0603747A Soldier Support/Survivability								D610			
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D610	Food Advanced Development	2294	2142	2162	2135	2511	2690	3497	3791	Continuing	Continuing		
C. <u>Other Program Funding Summary:</u> N/A													
D. <u>Schedule Profile</u>													
1	Initiated development of improved field food service refrigeration	FY 1994 2	3		FY 1995 2		FY 1996 2		FY 1997 2		4		
	Developed Unitized Group Ration (UGR)												
	Complete development of improved Long Range Patrol Ration, Tray Pack Ration and Cold Weather Ration												
	Automate Joint Service Recipe System												
	Conduct user tests of self-heating group ration												
	Transition tray pack and MRE improvements to procurement												
	Conduct user tests of biodegradable materials for ration packaging												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603747A Soldier Support/Survivability

D610

A. Project Cost Breakdown

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
2294	2142	2162	2135
Total	2294	2162	2135

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Natick, G E O Centers,											
Hunter Mfg											
Support and Management Organizations											
Soldier Systems Command											
Test and Evaluation Organizations											
TECOM											
Government Furnished Property: N/A											
Subtotal Product Development											
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project											

* D610 program line is ongoing in nature and is made up of multiple low cost projects which are on separate, staggered project schedules, as a result EAC, Budget to Complete, and Total Program Categories are not applicable

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603747A Soldier Support/Survivability

PROJECT

D669

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D669 Clothing and Equipment	6809	2080	3510	3531	3703	3777	4637	4114	Continuing	Continuing

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl Cont	Total Cost Cont
OMA PROCUREMENT		2890	7050	5960	6130	6130	6020	6020		

D. Schedule Profile

Complete Phase I DT/OT of STEPO	1	2	3							
Complete Equipment Modifications of STEPO										
Complete Phase II of DT/OT and Assessment Reports				1	4	1	2	3	4	4
Type Classify STEPO				X						
Revise Requirement of Individual Microclimate						X				
Cooling (IMC)										
Downselect Design of IMC								X		
Complete DT/OT of IMC										
Complete Early User Evaluation of Advanced EOD										
Suit										
Mod Design and Complete DT/OT of Advanced EOD										
Suit										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
4 - Demonstration And Validation	0603747A Soldier Support/Survivability	D669	
A. Project Cost Breakdown			
Clothing and Equipment		FY 1994	FY 1995
		6809	2060
		6809	2060
			3510
			3510
B. Budget Acquisition History and Planning Information: N/A			

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DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603760A Distributive Interactive Simulations -

PROJECT

DC80

Advanced Development

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC80 Reconfigurable Simulator Advanced Development	0	8385	0	0	0	0	0	0	0	8385

A. Mission Description and Budget Item Justification: This program element (PE) provides for advanced development of an overarching architecture for reconfigurable simulators. Project DC80 is focused on development of both the software and hardware interfaces and specifications required to completely determine a reconfigurable simulator. Emphasis is also placed on defining those software and hardware modules which have broad applicability across a wide range of reconfigurable simulators. Work done on this program will have benefit across the Army and DoD by providing standards for interoperability and software reuse in this emerging domain. This program element focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of reconfigurable simulators and is correctly placed in Budget Activity 4.

Project DC80 - Reconfigurable Simulators Advanced Development: Initiates advanced development of reconfigurable simulators for use in TRADOC Battle Laboratories. Program provides advanced development of modular software and hardware architectures for reconfigurable simulators. Development will provide a common framework for the development of a new generation of reconfigurable simulators that can be used to explore a wide variety of critical issues for the Force Projection Army. FY 95 efforts will include work on a reconfigurable generic rotary wing aircraft simulator, an armored vehicle simulator which will provide a basis for work on any ground vehicle system, a battle command and control vehicle, a fire support vehicle for use by both the artillery and air defense, and a combat service support module.

FY 1994 Accomplishments: Unfunded in FY 1994

FY 1995 Planned Program

- Develop overarching software architecture for reconfigurable simulators through complete domain analysis (5209)
- Develop and demonstrate modular hardware architecture suitable for reconfiguration (2100)
- Define generic software modules necessary for defining the reconfigurable simulator in the context of its architecture (900)
- SBIR/STTR (176).

FY 1996 Planned Program: Unfunded in FY 1996.

FY 1997 Planned Program: Unfunded in FY 1997.

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DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603760A Distributive Interactive Simulations -
Advanced DevelopmentB. Program Change Summary

Previous President's Budget	FY 1994	FY 1995	FY 1996	FY 1997
Appropriated Value		11787		
Adjustments to Appropriated Value		8385		
Current Budget Estimate Submission (BES)		8385		

C. Other Program Funding Summary

RDTE, A Budget Activity 5	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
PE 0604760A, Project DC81 Distributive Interactive Simulation	0	6412	0	0	0	0	0	0	0	6412
RDTE, A Budget Activity 5	0	3445	6139	3745	11328	6992	17063	14053	Cont'd	Cont'd
PE 0604715A Project DC91, Distributive Interactive Simulation										

D. Schedule Profile: The efforts funded in this project are non-system specific and represent continuing advanced development in the area of Reconfigurable Simulators; therefore, no milestones are provided.

Request for Proposal release	FY 1994	FY 1995	FY 1996	FY 1997
Contract Award	1 2 3	4 1 2	3 4 1	2 3 4
Software/Hardware Integration		X	X	X

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DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

 PROJECT
 0603760A Distributive Interactive Simulations -
 DC80
 Advanced Development
A. Project Cost Breakdown

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Software Development		5209		
Modular Hardware Development		2100		
Technical Data		900		
SBIR/STTR		176		
Total		8385		

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
TBD	Best value contract	Aug 95	7534	7534	0	0	7534	0	0	0	7534
Support and Management Organizations											
Miscellaneous SBIR/STTR	Various	Various	675 176	675 176	0	0	675 176	0	0	0	675 176

Government Furnished Property: Not Applicable

Subtotal Product Development											
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project											

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BUDGET ACTIVITY

4 - DEMONSTRATION AND VALIDATION

PE NUMBER AND TITLE

0603766A Tactical Exploitation of National
Capabilities (TENCAP) - Advanced Development
(TIARA)

PROJECT

D907

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
00607 Tactical Electronic Surveillance System - Adv Dev	15000	14615	26399	26913	23935	26057	29377	34319	Continuing	Continuing

A. Mission Description and Budget Item Justification: Supports the tactical commander's intelligence requirements for contingency force development and deep battle targeting as stated in Field Manual 100-5. Specific developments are managed within the Army's Tactical Exploitation of National Capabilities (TENCAP) program. The scope of the program is to leverage specific data and capabilities available from existing and emerging National and selected theater capabilities that meet stated Army tactical intelligence information and targeting needs to correct deficiencies, and develop concepts, techniques and prototype processors to exploit critical data for near-real time integration into the appropriate tactical echelon. This project supports the advanced development/enhancement of the Electronic Tactical User Terminal (ETUT), Mobile Integrated Tactical Terminal (MITT) (replaces the Tactical High Mobility Terminal (THMT)), Forward Area Support Terminal (FAST), Tactical Exploitation System (TES), and Electronic Processing and Dissemination System (EPDS). The Army's emerging TES will incorporate the standards and protocols dictated by the Common Imagery Ground Surface System (CIGSS) program. TES brings all of the existing and emerging Army TENCAP capabilities (EPDS, MIES, and ETRAC) into an integrated common baseline; downsized modular and scalable to meet a wide range of contingency requirements. TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems, including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program (DARP) (PE 0305154D). Specific details are provided in the Tactical Intelligence and Related Activities (TIARA) Congressional Justification Book, Volume II, and in the Army TENCAP Master Plan. This Program Element (PE) focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of TENCAP and is correctly placed in Budget Activity 4.

FY 1994 Accomplishments:

- Continued to pursue technology for the refinement of the TENCAP Common Baseline for fully exploiting National capabilities to meet emerging worldwide contingency scenarios. (6996)
- Initiated advanced development of five additional MITTs to replace existing THMTs. (2600)
- Continued advanced development to retrofit ETUT with enhanced MITT hardware and software. (1800)
- Continued support to TENCAP program management and administrative activities (e.g. FFRDC (Aerospace), Army Research Laboratory (ARL) support, U.S. Army Space Program Office (ASPO) support and Contractor System Engineering and Technology Assistance (SETA) support. (3573)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
4 - DEMONSTRATION AND VALIDATION	0603766A Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)	D907	
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Continue to pursue technology for the refinement of the TENCAP Common Baseline for fully exploiting National capabilities to meet the changing threat environment (to include Demand Assign Multiple Access (DAMA) Appliqué into Common Baseline Synthesized UHF Computer Controlled Sub-System (SUCCESS) radios and support to the Joint Collection Management Tool (JCMT), the follow-on to the Army's Collection Management Support Tools (CMST). (9284) Initiate study for concept design of the TES. (1230) Continue advanced development efforts to retrofit ETUTs with enhanced MITT hardware and software. (400) Continue support to TENCAP program management with administrative activities (e.g. FFRDC (Aerospace)), ARL support, ASPO support and Contractor SETA support. (3605) Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (296) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Continue to pursue technology and refine techniques for fully exploiting National capabilities which are common to all TENCAP systems to meet emerging worldwide contingency scenarios such as upgrades to Communication System Processor (CSP) to incorporate Tactical Packet Network (TPN) and Defense Security Network (DSNET) connectivity, DAMA Appliqué to SUCCESS Radio, and continue support to JCMT. (9478) Initiate design concept and prototype development of Tactical Exploitation Systems (TES) with state-of-the-art hardware and software. (10236) Complete advanced development of ETUT. (400) Continue support to TENCAP program management with administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support, Contractor SETA support and TEC. (Part of this effort was funded under PE 0603730A in FY 95). (5275) Continue support to efforts being developed under PE 0305154D (DARP) Project P531 (e.g., FFRDC (Aerospace), ASPO, SETA, and TEC. (2980) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Continue to pursue technology and refine techniques for fully exploiting National capabilities common to all TENCAP systems to meet emerging worldwide contingency scenarios. (6550) Initiate advanced development efforts for ground processing technologies for new National sensors capabilities that will be incorporated into TES. (10899) Continue support to TENCAP program management with administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support, Contractor SETA support and TEC. (6070) Continue support to efforts being developed under PE 0305154D Project P531 (e.g., FFRDC (Aerospace), ASPO, Contractor SETA, and TEC.) (3394) 			

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DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - DEMONSTRATION AND VALIDATION

0603766A Tactical Exploitation of National
Capabilities (TENCAP) - Advanced Development
(TIARA)

D907

B. Program Change Summary

Previous President's Budget	FY 1994	FY 1995	FY 1996	FY 1997
Appropriated Value	15295	15008	22000	12756
Adjustments to Appropriated Value (SBIR/STTR	15295	14815	0	0
Decrement)	-226	0	0	0
Current Budget Submit/President's Budget	15069	14815	28369	26913

Change Summary Explanation:

Funding: IN FY 96, THE ARMY CONSOLIDATED THE REMAINING PE's SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATIONAL CAPABILITIES (TENCAP) PROGRAM. ALL EFFORTS FUNDED UNDER PE 0603730A/PROJECT D560 WERE CONSOLIDATED WITH PE 0603766A/PROJECT D907 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION PE 0604740A/PROJECT D662 WAS CONSOLIDATED WITH PE 0604766A/PROJECT D909 IN FY 96 AND BEYOND. These PE's/Projects were consolidated because in FY 95 all funds directly related to the development of IES, JSIPS, and ETRAC programs were moved to OSD PE 0305154D, DARPA. Even though the funds have been moved to the Defense Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding to support these DARO efforts (ASPO salaries and expenses, TEC, FFRDC, Contractor SETA, and certain studies) remain in this PE and are still required. In addition to the DARO support cost, Project D560 also funded the development of TES which was initiated in FY 95. Therefore, the increases to this PE/PROJ in FY 96 and FY 97 is the result of consolidating Proj D560 (which prior to FY 96 funded the TES development effort and support to Army TENCAP systems developed under DARO) with this project.

Schedule: None

Technical: None

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PE NUMBER AND TITLE

PROJECT

4 - DEMONSTRATION AND VALIDATION

0603766A Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)

D907

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, A Budget Activity 4 PE 0603730A Project D560 Tact Surv Sys - Adv Dev	15140	11717	0	0	0	0	0	0		
RDTE, A Budget Activity 5 PE 0604740A Project D662 Tact Surv Sys - Eng Dev	37534	2093	0	0	0	0	0	0		
PE 0604766A Project D909 TENCAP - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28333	Cont	Cont
RDTE, D Budget Activity 7 PE 0305154D Project P531 DARP	0	40017	33833	37216	12390	6328	6328	6328	Cont	Cont
Other Procurement Army, OPA-2 BZ 7315 TENCAP	7729	4636	4617	1807	1784	1853	4971	14916	Cont	Cont
BA 0329 DARP	1927	2411	0	0	0	0	0	0	N/A	N/A
Procurement, Defense Wide PE 0305154D Project P531		0	88700	123400	77900	69100	71400	73300	Cont	Cont

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
1	2	3	4	1
2	3	4	1	2
3	4	1	2	3
4	1	2	3	4
5	2	3	4	1
6	3	4	1	2
7	4	1	2	3
8	1	2	3	4
9	2	3	4	1
10	3	4	1	2
11	4	1	2	3
12	1	2	3	4

Complete Field Testing of MITT 2-6
Complete Adv Dev ETUT Retrofit
Initiate Dev of Additional 5 MITTs

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY		PE NUMBER AND TITLE		DATE		February 1995			
4 - DEMONSTRATION AND VALIDATION		0603766A Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)							
		FY 1994		FY 1995		FY 1996		FY 1997	
		1	2	3	4	1	2	3	4
Initiate Analysis/Design Concept for TES									
Test Prototype HOATR				X					
Initiate Prototype Development for TES				X					
Complete Adv Dev of DAMA Appliqué to all TENCAP Common Baseline									
SUCCESS Radar									
Complete Adv Dev of 5 Additional MITTS									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - DEMONSTRATION AND VALIDATION

0603766A Tactical Exploitation of National
Capabilities (TENCAP) - Advanced Development
(TIARA)

D907

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
System Development:				
MITT	2600	0	0	0
ETUT	1800	400	400	0
Common Baseline (*1-*2)	6996	9284	9478	6550
TES	0	1230	10236	10899
Subtotal System Development	11396	10914	20114	17449
Program Management				
ASPO In-House (*4)	1122	1109	2441	2479
FFRDC (*2)	1081	953	75	95
System Engineering (Contractor) (*2)	870	1339	4514	5840
System Engineering (Government) (*2)	600	500	1225	1050
Subtotal Program Management (*3)	3673	3901	8255	9464
Total (*2)	15069	14815	28369	26913

(*1) TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the DARPA (PE 0305154D).

(*2) In FY 96 and beyond, efforts previously funded under 0603730A.D560 are consolidated into this project.

(*3) Approximately 40% of program management cost in FY 96 and FY 97 support efforts being developed under PE 0305154D.P531.

(*4) The ASPO In-House support in this project also supports efforts being developed under PE 0604766A.D909.

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PE NUMBER AND TITLE

PROJECT
D907

4 - DEMONSTRATION AND VALIDATION

0603766A Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)

B. Budget Acquisition History and Planning Information
Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
ARL (MITT)	MIPR	2Q94	N/A	N/A	N/A	2000	0	0	0		
Classified (ETUT)	MIPR	1Q94	N/A	N/A	N/A	1800	400	400	0		
Classified (Cmn Bsln)	MIPR	N/A	N/A	N/A	N/A	7596	9284	9478	6550	Cont	Cont
TBD (TES)	MIPR	TBD	N/A	N/A	0	0	1230	10236	10899	Cont	Cont
Support and Management Organizations											
USASPO	In-House	N/A	N/A	N/A	N/A	1122	1109	2441	2479	Cont	Cont
SSD/FDEA											
(FFRDC)	MIPR	1Q EA FY	N/A	N/A	N/A	1081	953	75	95	Cont	Cont
TEC (Sys Eng Govt)	MIPR	1Q EA FY	N/A	N/A	N/A	0	0	1025	1050	Cont	Cont
Classified (Sys Eng Cont)											
ARL (Sys Eng Govt)	MIPR	1Q EA FY	N/A	N/A	N/A	870	1339	4514	5840	Cont	Cont
Test and Evaluation Organizations: Non-	MIPR	1Q EA FY	N/A	N/A	N/A	600	500	200	0	Cont	Cont
Government Furnished Property: None											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY

4 - DEMONSTRATION AND VALIDATION

PE NUMBER AND TITLE

0603766A Tactical Exploitation of National
Capabilities (TENCAP) - Advanced Development
(TIARA)

PROJECT

D907

Total

Prior to
FY 1994

FY 1994

FY 1995

FY 1996

FY 1997

Budget to
CompleteTotal
ProgramSubtotal Product Development
Subtotal Support and Management
Subtotal Test and Evaluation
Subtotal Government Furnished Property
Program Total

N/A	11396	10914	20114	17449	Cont	Cont
N/A	3673	3901	8255	9464	Cont	Cont
N/A	0	0	0	0	0	0
N/A	0	0	0	0	0	0
N/A	15069	14815	28369	26913	Cont	Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603774A Night Vision Systems Advanced Dev								D131	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D131 Night Vision Systems Advanced Development		4694	2676	2860	2919	3247	3215	3682	3676	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification This program element encompasses the advanced development phase of the Army Acquisition cycle for Night Vision and Electro-Optic (NVEO) devices/systems and prepares them for engineering development. The key objective of this program is to provide NVEO devices/systems for acquisition and engagement of enemy targets at maximum weapon system ranges under degraded battlefield weather conditions and in countermeasure environments. The efforts are centered around development of countermeasure and electro-optic sensors for the individual soldiers and combat vehicles to meet stated Army deficiencies. This project provides the mechanism to transition tech base programs for electro-optical sensors to the engineering manufacturing development (EMD) phase of the acquisition cycle. This project provides the funding necessary to institute advances for product improvement or horizontal integration to upgrade current capabilities. The focus is on efforts associated with advanced technology development and is properly placed in this budget activity.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Continuation of the Standardized Advanced Detector Dewar Assembly (SADA) program. This program developed the Tri-Service Standard High/Mid to High Dewar Assembly for Second Generation Infrared sensors to meet future weapon systems requirements (such as Horizontal Technology Integration). (3195) Implemented development of an integrated helmet mounted display program (Mounted Warrior) for the combat vehicle crewman to permit viewing of the vehicle's tactical displays while operating in an "open hatch" mode (1499) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Complete the SADA program. Twenty five (25) units will be delivered and integrated into on-going development of Second Generation Infrared (IR) systems such as Improved TOW Acquisition System (ITAS). (1395) Implement miniaturization of electronic components and optimal optical design for mounted warrior helmet mounted display (726) Begin development of Advanced Second Generation FLIR (SGF) B kit features such as aviation application, digital imagery interface card and improved optical (OI) features. (500) Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR) (57) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Prepare documentation for integration and transition of the helmet mounted display to Program Executive Office, Armored Systems Modernization (PEO ASM) (175) Continue Advanced Second Generation FLIR improvement for HTI B kit. Demonstrate through modeling, B kit applications to aviation (Apache) and Long Range Advanced Scout Surveillance System (LRAS3). (2585) Prepare acquisition documentation and implement developmental contract for LRAS3 start (200) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
4 - Demonstration And Validation	0603774A Night Vision Systems Advanced Dev	D131	

4 - Demonstration And Validation

- Implement digital imagery interface card into HTI SGF B kit (292)
- Implement in-house prototype of aviation SGF B kit (Apache) (2043)
- Implement Advanced SGF B kit features into M2A3, BFVS and M8 (584)

Previous President's Budget	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Appropriated Value	4768	2695	2975	2933
Adjustments to Appropriated Value	4768	2678		
SBIR/STTR (74)	-74			
Current Budget Submit/President's Budget	4694	2678	2960	2919

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To Compl	Total Cost
									Continue	Continue
PE 0602709A/Night Vision and Electro-Optical Technology RDTE, A Budget Activity 3	18852	19326	17086	17175	18071	19457	19552	20057	Continue	Continue
PE 0603710A/Night Vision Advanced Development RDTE, A Budget Activity 4	33324	33177	37969	37193	31544	41962	43915	42401	Continue	Continue
PE 0604710A Night Vision Devices Engineering Development, Budget Activity 5	41328	42803	39697	39295	22952	21487	18746	30364	Continue	Continue

	FY 1994		FY 1995		FY 1996		FY 1997	
1	2	3	4	1	2	3	4	1
	X*							
Implement development of integrated helmet mounted display program								
Battle Lab Simulation			X*					
Complete study of display application for aviation			X*					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995										
BUDGET ACTIVITY										PE NUMBER AND TITLE												
4 - Demonstration And Validation										0603774A Night Vision Systems Advanced Dev												
										FY 1994		FY 1995		FY 1996		FY 1997						
										1	2	3	4	1	2	3	4	1	2	3	4	
Miniaturization of electronic components and optical design for helmet mounted display																						
Coordinate Warfighting experiment planning with mounted battlelab																						
Advanced B kit features																						
Transition to HTI B kit																						
Implementation system integration program																						
Prepare acquisition documentation and implement development contract																						
Implement In-House prototype																						
*Complete																						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603774A Night Vision Systems Advanced Dev	February 1995	D131

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Primary Hardware Development	500	700	1800	1800
Ancillary Hardware Development	1400	1063	0	0
Contractor Engineering Support	900	300	260	260
Government Engineering Support	1400	350	400	400
Travel	50	45	50	45
Miscellaneous	444	63	150	114
Development Test & Evaluation	0	100	300	300
SBIR/STTR	0	57	0	0
Total	4694	2678	2960	2919

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603801A Aviation Advanced Development

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	15480	16647	8430	8686	7898	8324	8551	8896	Continuing	Continuing
DB32 Advanced Maintenance Concepts and Equipment	3572	4440	2371	2303	2944	2808	3409	3487	Continuing	Continuing
DB33 Cargo Handling Equipment	2144	2210	2152	2125	2 41	2678	3142	3211	Continuing	Continuing
DB45 Aviation Life Support Equipment (ALSE) - Advanced Development	9764	9897	3807	4238	2813	2740	0	0	0	33459

A. Mission Description and Budget Item Justification: This PE provides advanced development aviation support of tactical programs associated with air mobility, advanced maintenance concepts and equipments, and Aviation Life Support Equipment (ALSE). The projects in this Program Element support research efforts in advanced development phase of the acquisition strategy and are correctly placed in Budget Activity 4.

Project DB32 - Advanced Maintenance Concepts and Equipment: This project enhances utilization of current and future aircraft by improving the efficiency of maintenance (primarily in the area of diagnostics/prognostics) and servicing operations by: replacing obsolete, insupportable ground support equipment with new and standardized multi-output equipment compatible with all Army aircraft models; developing rapid battle repair procedures and tools to speed the return of aircraft to combat ready status; and developing new equipment for aerial recovery of damaged aircraft. Included in the project is the Intelligent Fault Locator (IFL), a program to test artificial intelligence-based troubleshooting software on an AH-64 Apache aircraft.

FY 1994 Accomplishments:

- Demonstrated Non-Destructive Inspection/Non-Destructive Test (NDI/NDT) prototype hardware and initiate final design effort (286)
- Completed development, testing and demonstration of Combat Maintenance/Battle Damage Repair (CM/BDR) kit for fiber optic systems (261)
- Completed detailed design, fabricated hardware, and conducted static lift tests of Unit Maintenance Aerial Recovery Kit (UMARK) (200)
- Initiated design, fabrication, and integration of Advanced Boresight Equipment (ABE) pre-production units (2405)
- Complete evaluation and finalized design of the Shop Equipment Contact Maintenance (SECM) (20)
- Interface electronic Apache TM repair procedures with IFL and investigate active bus interface diagnostic methods (400)

FY 1995 Planned Program:

- Conduct development and operational test of the UMARK (230)
- Continue fabrication and integration of ABE pre-production units; and initiate an ILS program in preparation for a milestone III IPR. (3502)
- Automate the NDI/NDT inspection methods and repair procedures through application knowledge based software (617)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603801A Aviation Advanced Development	February 1995
<ul style="list-style-type: none"> • SBIR/STTR (91) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> • Demonstrate knowledge base automated NDI/NDT inspection and repair procedures for composite components (114) • Initiate a Dem/Val program for a comprehensive on-board diagnostic system interfaced with an automated maintenance and logistics system (1490) • Complete the Dem/Val phase of the ABE Program (342) • Initiate a program to explore high reliability, low maintenance alternatives to nickel cadmium batteries (162) • Initiate development of an Advanced Portable Maintenance Aid for hand free interface with maintenance procedures and instructions (153) • Develop/demonstrate environmentally sensitive options for aircraft maintenance (110) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> • Initiate development of a field repair capability for low observable components (200) • Complete detailed design of the on-board diagnostics system and define the interface with the automated maintenance and logistics system (1317) • Assemble the advanced Portable Maintenance Aid and initiate a field demonstration (290) • Conduct field evaluations of nickel cadmium battery alternatives (198) • Demonstrate environmentally friendly alternatives for aircraft maintenance problems (298) 		
Project DE33 - Cargo Handling Equipment: This project develops equipment and operational improvements for loading and off-loading helicopter cargo in all-weather, around the clock combat scenarios.		
FY 1994 Accomplishments: <ul style="list-style-type: none"> • Conducted functional test and completed documentation for improved 30mm Ammo Loader and demonstrate a rapid (15 minutes) turnaround FARP (561) • Contract award, initiated design of Advanced Aerial Cargo Handling System to enhance cargo helicopter productivity (1533) • Complete design, fabrication and support testing of Advanced Material External Cargo Sling leg (50) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> • Complete design, fabrication and bench test of a pre-production prototype of the 30mm Ammo Loader compatible with weight goals for both the AH-64A and C/D aircraft (300) • Complete the detailed design and initiate fabrication of advanced internal and external cargo handling systems (1864) • SBIR/STTR (46) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> • Initiate definition of a high-mobility transport system for aircraft maintenance units (433) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603801A Aviation Advanced Development

- Complete fabrication and installation of advanced internal and external cargo handling systems and demonstrate their impact on cargo aircraft productivity. (1719)

FY 1997 Planned Program:

- Complete the demonstration of advanced internal and external cargo handling systems (1171)
- Initiate the demonstration of a cargo movement system for heavy (95th percentile) loads (416)
- Continue the aircraft maintenance unit mobility system definition (538)

Project DB45 - Aviation Life Support Equipment (ALSE)/Advanced Development: This project provides advanced development for those systems and items of equipment which are unique and necessary for the sustainment and enhanced survivability of Army aircrews and passengers on the future integrated battlefield and during related training activities. Advanced development programs will focus on the development and evaluation of emerging technologies and the adaptation of commercial and nondevelopmental items (NDI) to military requirements. The Joint Cockpit Airbag System (JCABS) effort will evaluate a variety of supplemental restraint system approaches to improve crew and passenger crash survivability and thereby reduce potential injuries/casualties. The Air Warrior program will provide the aircrew with a systems approach to chemical and biological (CB) protection, noise protection, microclimatic conditioning, crash and post-crash survivability, concealment and environmental protection, ballistic protection, night vision capability, heads-up displays, nuclear flash protection, directed energy eye protection, and flame/heat protection. The AW design will improve overall aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety, and survivability. Both joint and service independent efforts will be pursued under the scope of this project.

FY 1994 Accomplishments:

- Continued fabrication and evaluation of Advanced Laser Eye Protection (LEP) (Joint Service) (947)
- Complete evaluation and testing of Inflatable Body and Head Restraint System (IBAHRS) (Joint Service) (699)
- Initiate development of Air Warrior Program definition and concept planning documents (potential joint program) (1858)
- Initiate development of Joint Cockpit Air Bag System (JCABS) (Joint Service) (2246)
- Continue Advanced Development of the Agile Laser Eye Protection (LEP) Program (Joint Service) (1414)
- Initiate Aircrew Integrated Common Helmet (AICH) Advanced Development (2600)

FY 1995 Planned Program:

- Continue fabrication and evaluation of the Agile LEP Program (Joint Service) (975)
- Complete Milestone III IPR for IBAHRS (Joint Service) (172)
- Conduct Air Warrior Advanced Development and technology trade-off (5869)
- Continue Advanced Development of the JCABS Program (Joint Service) (1381)
- Continue AICH Advanced Development (1399)
- SBIR/STTR (201)

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DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603801A Aviation Advanced Development

FY 1996 Planned Program:

- Prepare for ICABS Milestone II (Joint Service) (857)
- Continue fabrication and evaluation of the Agile LEP (Joint Service) (550)
- Initiate Air Warrior Advanced Development and evaluate prototype design alternatives (1900)
- Initiate NBC Advanced Initiatives Advanced Development for air vehicle and aircrew (600)

FY 1997 Planned Program:

- Complete Air Warrior Advanced Development and evaluate prototype design alternatives(2232)
- Conduct Air Warrior early user demonstration/test (506)
- Continue fabrication and evaluation of the Agile LEP (Joint Service) (550)
- Continue NBC Advanced Initiatives Demonstration/Validation (950)

B. Program Change Summary:

Previous President's Budget
Appropriated Value
Adjustments to Appropriated Value
a. SBIR/STTR (-236)
Current Budget Submit/President's Budget

FY 1994	FY 1995	FY 1996	FY 1997
15716	9367	8459	8693
15716	16647		
236			
15480	16647	8430	8666

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995

PE NUMBER AND TITLE

0603801A Aviation Advanced Development

PROJECT

DB32

	COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D832	Advanced Maintenance Concepts and Equipment	3572	4440	2371	2303	2944	2908	3409	3487	Continuing	Continuing

C. Other Program Funding Summary

**RDTE, A Budget Activity 2 PE 0602211 Project
A47A Aeronautical and Aircraft Weapons Tech**

D. Schedule Profile

Completed development, testing and demonstration of (CM/BDR) Kit

Completed detailed design, fabricated hardware, and conducted static lift tests of (UMARK)

Complete evaluation and finalize design of the (SECM)

Conduct development and operational test of the UMARK

Complete the Dem/Val Phase of the ABE program

Complete detailed design of the on-board diagnostics system and define the interface with the automated maintenance and logistics system

[illegible]

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

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BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603801A Aviation Advanced Development

PROJECT

DB32

A. Project Cost Breakdown

Primary Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997
Software Development	630	565	700	400
Systems Engineering	370	420	223	600
Integrated Logistics Support	1453	264	30	425
DT/OT		2100	126	
Program Management	50	296	398	
Research Personnel	155	170	150	167
Miscellaneous	774	500	594	596
	140	125	150	115
Total:	3572	4440	2371	2303

B. Budget Acquisition History and Planning Information: Not required

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BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603801A Aviation Advanced Development								DB33	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB33	Cargo Handling Equipment	2144	2210	2152	2125	2141	2678	3142	3211	Continuing	Continuing

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To Compl	Total Cost
RDTE, A Budget Activity 2 PE 0602211 Project	23004	16672	17732	23294	25212	27636	27037	29685	Cont'g	Cont'g

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
	1 2 3 X*	4 1 2 3	4 1 2 3	4 2 3 4
Contract award, initiated design of Advanced Aerial Cargo Handling System Complete design, fabrication and support testing of the Advanced Material External Cargo Sling Leg	X*			
Complete design, fabrication and bench test of a pre-production prototype of the 30mm Ammo Loader compatible with weight goals for both the AH-64A and C/D aircraft		X		
Complete the demonstration of advanced internal and external cargo handling systems				X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603801A Aviation Advanced Development	February 1995	DB33

A. Project Cost Breakdown

Primary Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997
Systems Engineering	627	1000	1000	770
DT	500	316	377	230
	62			347
Program Management	150	120	149	164
Research Personnel	705	697	545	533
Miscellaneous	100	77	81	81
Total	2144	2210	2152	2125

B. Budget Acquisition History and Planning Information: Not required

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BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603801A Aviation Advanced Development								DB45	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB45	Aviation Life Support Equipment (ALSE) - Advanced Development	9764	9997	3907	4236	2613	2740	0	0	0	33459

C. Other Program Funding Summary

RDTE, A Budget Activity 5 PE 0604801A Project
DC45 Aviation Life support equipment (ALSE)
Engineering Development
Aircraft Procurement, Army (APA) SSN AZ3110
ALSE

D. Schedule Profile

Air Warrior
Technology and Baseline Assessments
Material Need Statement (MNS) Approval
Milestone 0
Demonstration/Validation Phase
Joint Cockpit Air Bags system (JCABS)
Demonstration/Validation contract award
Complete Trade Studies
Component design verification test
Engineering Manufacturing Development

[illegible]

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY		FPE NUMBER AND TITLE				DATE	PROJECT		
4 - Demonstration And Validation		0603801A Aviation Advanced Development					February 1995		
DB45									
A. Project Cost Breakdown									
Contract Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997				
Program Management Support		8797	6990	174	670				
Total		967	3007	3733	3588				
		9764	9997	3907	4238				
B. Budget Acquisition History and Planning Information									
Performing Organizations									
Contractor or	Contract								
Government	Method/Type								
Performing	or Funding								
Activity	Vehicle								
Product Development Organizations									
IBAHRS, Simula,									
Phoenix, AZ									
(JCABS) Simula,									
Inc. Phoenix, AZ									
SS-CPFF May 1994									
Agile Laser									
NAWC									
SS-CPFF Feb 95									
NBC TBD									
C-CPFF Jan 97									
Support and Management Organizations									
MIPR									
Various									
Organization									
Total									
Performing									
Organization									
Government Furnished Property -Not applicable									
Total									
Performing									
Organization									
Government Furnished Property -Not applicable									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603801A Aviation Advanced Development

Total

	Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development	10360	3130	1490	1124	600	3920	20624
Subtotal Support and Management	8777	6634	8507	2783	3638	1636	31975
Subtotal Test and Evaluation							
Total Project	19137	9764	9997	3907	4238	5556	52599

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 1995

BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603802A Weapons And Munitions Advanced Dev

PROJECT

XXXB

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
XXXB MK-19 IMPROVEMENTS	752	1246		0	0	0	0	0	0	1998

A. Mission Description and Budget Item Justification: This program element covers improvements to the MK19-3 Automatic Grenade Launcher. In addition to investigating soft mounts, this improvement program develops two system-specific training devices: a Gunnery Trainer for the MK19 and a Tactical Engagement Simulator for the MK19-3. The Gunnery Trainer is a video style classroom trainer. It is an adaptation of an existing training device that will provide basic gunnery skills in engaging single and multiple targets with use of the Traverse and Elevation (T&E) Mechanism and free gun engagement. This device will replicate with high accuracy and resolution the aiming, firing, and fire adjustment of the actual weapon to include hits/misses, trajectory, and flight characteristics of the 40mm ammunition. The Tactical Engagement Simulator is an adaptation of the Multiple Integrated Laser Engagement System (MILES), another existing training device. This device will be used as a means to evaluate the performance of the weapon system and crews in force-on-force training exercises. The Soft Mount is designed to provide a firing platform with improved stability. This effort will result in improved accuracy, faster reaction times, unlimited traverse, and a reduction in training costs through reduced ammunition consumption and barrel wear. This project focuses on efforts associated with advanced technology development. It demonstrates general military utility, to include demonstration and validation, of tactical engagement simulation and is correctly placed in budget activity 4.

FY 1994 Accomplishments:

- Concept formulation/Acquisition strategies (183)
- Survey industry for commercially available technology (234)
- Trade-off determination (335)

FY 1995 Planned Program:

- Best Technical Approach for Gunnery Trainer (115)
- Best Technical Approach for Tactical Engagement Simulator (147)
- Preliminary Request for Proposal for Gunnery Trainer (58)
- Performance specification on Gunnery Trainer (94)
- Milestone I/II for Gunnery Trainer (70)
- Preliminary Request for Proposal for Tactical Engagement Simulator (66)
- Milestone I/II for Tactical Engagement Simulator (70)
- Concept Formulation/Acquisition Strategy for Soft Mount (106)
- Market Survey/purchase of commercially available Soft Mounts (76)
- Confidence tests for Soft Mount (43)
- Generate Performance Specification for Soft Mount (375)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

0603802A Weapons And Munitions Advanced Dev XXXB

4 - Demonstration And Validation

• SBIR/STTR (26)

B. Program Change Summary

Previous President's Budget

Appropriated Value

Current Budget Submit/President's Budget

FY 1994

763

752

752

FY 1995

663

1246

1246

FY 1996

FY 1997

C. Other Program Funding Summary

WTCV,A

GL3200 Items Less Than \$2.0M

FY 1994

2

3

X*

FY 1995

4

1

693

FY 1996

2

3

1056

FY 1997

4

1

2

FY 1998

4

3

4

FY 1999

2

3

4

FY 2000

1

2

3

FY 2001

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FY 2002

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FY 2003

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FY 2004

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FY 2013

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FY 2014

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FY 2015

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FY 2016

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FY 2017

4

3

4

D. Schedule Profile

Concept formulation/Acquisition

strategies

Survey industry for commercially

available technology

Trade-off determinations

Best Technical Approach for Gunnery

Trainer (GT)

Concept formulation/Acquisition Strategy

for Soft Mount

Market Survey for Soft Mount

Preliminary Request for Proposal for GT

Performance specification on GT

Milestone I/III for Gunnery Trainer

Preliminary Request for Proposal for

Tactical Engagement Simulator (TES)

Milestone I/II for TES

Small Purchases of Soft Mount

Confidence Test for Soft Mount

Performance Specification of Soft Mount

X*

X

X

X

X

X

X

X

X

X

X

X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			0603302A Weapons And Munitions Advanced Dev XXXB		
4 - Demonstration And Validation							
A. Project Cost Breakdown							
Other Government Agency Support		FY 1994	FY 1995	FY 1996	FY 1997		
Program Management Support		732	1050				
Contract Support		20	136				
Total		752	1246				
B. Budget Acquisition History and Planning Information							
Performing Organizations							
Contractor or	Contract						
Government	Method/Type						
Performing	or Funding						
Activity	Vehicle						
Product Development Organizations							
STRICOM	MIPR						
Orlando, FL	May 94		732	600			1332
Support and Management Organizations							
PM Small Arms/			20	586			606
TACOM							
Picatinny Ars, NJ							
Contract Support Organizations							
TACOM				60			60
Picatinny Ars, NJ							
Test and Evaluation Organizations: N/A							
Government Furnished Property: N/A							
Subtotal Product Development			732	600			1332
Subtotal Support and Management			20	586			606
Subtotal Contract Support				60			60
Subtotal Test and Evaluation							
Total Project			752	1246			1998

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
4 - Demonstration And Validation		0603804A Logistics And Engineer Equipment - Adv Dev									
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	13609	14664	7427	7651	7063	5338	5696	6365	Continuing	Continuing	
DG01 Combat Engineer Equipment Advanced Development	3601	9174	0	0	0	0	0	0	0	0	
DG10 Advanced Tactical Power Sources	186	230	135	133	131	174	200	224	Continuing	Continuing	
DG11 Advanced Electrical Energy Concepts Advanced Development	1595	812	227	223	220	216	300	300	Continuing	Continuing	
DG14 Logistics Support Equipment Advanced Development	835	516	97	90	91	90	100	100	Continuing	Continuing	
DK39 General Support Equipment Advanced Development	964	853	965	900	1497	1462	1799	1970	Continuing	Continuing	
DK41 POL Distribution Equipment Advanced Development	799	666	910	920	941	906	969	998	Continuing	Continuing	
D266 Airdrop Equipment Advanced Development	4022	1224	1463	1466	1502	1507	1469	1698	Continuing	Continuing	
D426 Tactical Rightwall Shelter Advanced Development	924	806	3590	4069	2681	961	1099	1097	Continuing	Continuing	
D526 Marine Orientation Log Equipment Advanced Development	463	363	0	0	0	0	0	0	0	0	

A. Mission Description and Budget Item Justification: This program supports advanced development of new and improved technologies for combat support and combat service support equipment essential to sustaining combat operations. Advancements in airdrop, rigid wall shelters, marine craft, bridging, electric power generators and batteries, potable water, environmental control and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational capability, lethality and survivability of the first to fight; and to provide for greater sustainment of all combat forces while reducing the logistics support burden.

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A. Mission Description and Budget Item Justification: This program supports advanced development of new and improved technologies for combat support and combat service support equipment essential to sustaining combat operations. Advancements in airdrop, rigid wall shelters, marine craft, bridging, electric power generators and batteries, potable water, environmental control and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational capability, lethality and survivability of the first to fight; and to provide for greater sustainment of all combat forces while reducing the logistics support burden.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
4 - Demonstration And Validation	0603804A Logistics And Engineer Equipment - Adv Dev	
<p>Project DG01 - Combat Engineer Equipment Advanced Development</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Performed theoretical analysis and developed algorithms for Laser Vibration Sensor System (LVSS). (880) • Completed preliminary design and designed, fabricated and tested an LVSS prototype. (370) • Conducted Heavy Dry Support Bridge (HDSB) analysis and upgraded prototype. (824) • Conducted HDSB Truck/Trailer study. (462) • Evaluated HDSB configuration for use in Multi-Role Bridge company. (126) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Complete validation of LVSS sensor and structural models. (978) • Complete final design and fabricate LVSS. (2940) • Evaluate Medium Assault Bridge. (3918) • Demonstrate and test Military Load Class 96 Ton (MLC 96) capability for HDSB. (587) • Prepare HDSB Milestone II documentation and solicitation package for EMD phase contract. (559) • SBIR/STTR decrement. (192) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Program not funded. <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Program not funded. <p>Project DG10 - Advanced Tactical Power Source Advanced Development</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Developed prototype BA-6699 High Pulse Battery for Laser Counter Measures Systems, Ground Laser Locator Designator, Modular Universal Laser Equipment, and Laser Target Designator systems. (86) • Developed Prototype high rate, low cost laser training battery. (50) • Developed pre-production Nickel Metal Hydride analog of BB-590 with 50% performance improvement for Program Executive Officer Communications System (50) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Develop prototype throw away pouch battery for Program Manager, MILSTAR (Army) satellite communications devices. (80) • Develop second generation Smart Battery for on-line indication of battery life status. (95) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603804A Logistics And Engineer Equipment -
Adv Dev

- Develop safe lithium rechargeable battery for communications and Special Operations Forces. (50)
- SBIR/STTR decrements. (5)

FY 1996 Planned Program:

- Develop an improved rechargeable battery and charger based on the lithium ion battery chemistry for use in the Single Channel Ground and Airborne Radio System (SINCGARS). (40)
- Develop techniques for reducing battery related disposal costs. (40)
- Develop a vehicular mounted battery charging station. (55)

FY 1997 Planned Program:

- Conduct field test and evaluation of next generation of primary lithium based batteries. (30)
- Begin development of high power battery chemistry with no toxic/hazardous materials. (60)
- Develop High Energy/High Power throwaway battery for 21st Century Land Warrior. (43)

Project DG11- Advanced Electrical Energy Concepts Advanced Development: Provides advanced development for electrical energy devices to improve soldier mobility, sustainability and survivability. This project is scheduled to produce proof-of-principle prototypes supporting tactical electric power procurement, and to reduce weight and size with reduced signature for diesel powered generators and Power Units/Power Plants rated at 3, 5, 10, 15, 30 and 60 kilowatts (kW).

FY 1994 Accomplishments:

- Identified critical issues as to cost, Integrated Logistics Support (ILS) and user concerns of solid state controls and composites. (100)
- Initiated development of a lightweight, emerging technology 10 kW APU module. (1225)
- Evaluated commercial state-of-art variable speed, constant frequency systems. (295)

FY 1995 Planned Program:

- Demonstrate and test new lightweight 5 kW, 10 kW and 15 kW generator sets. (362)
- Test variable speed constant frequency components in generator sets. (433)
- SBIR/STTR Adjustment (17)

FY 1996 Planned Program:

- Evaluate bread-board models of advanced engine technologies. (227)

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BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603804A Logistics And Engineer Equipment - Adv Dev	
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Test commercial, state-of-the-art technologies for insertion to FY 99 buy (223) <p>Project DG14 - Logistics Support Equipment Advanced Development</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Completed fabrication and took delivery of two 40-foot container unstuffing Container Cargo Retriever (CCR) prototypes (393) • Initiated testing of CCRs at Aberdeen (189) • Initiated preparation of program documentation for CCR Milestone II (148) • Developed CCR stereo vision enhancement. (105) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Complete testing of CCR prototypes (386) • Complete development of CCR stereo vision enhancement. (30) • Conduct CCR Milestone II (89) • SBIR/STTR decrement. (11) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Award contract for Visibility Improvements for forklift Carriages (VIC) (67) • Prepare program documentation for VIC (20) • Initiate testing of VIC prototypes (10) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Complete testing of VIC prototypes (45) • Complete materiel change management documentation for VIC (25) • Complete production contract package for VIC (20) <p>Acquisition Strategy: Develop engineering prototype and award competitive contract for production or select NDI equipment based on Market Investigation and FFPs from industry.</p> <p>Project DK39 - General Support Equipment Advanced Development</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Investigated alternative refrigerants and developed 36K British Thermal Units per Hour Environmental Control Unit (BTUH ECU). (161) • Modified and tested units with selected refrigerants. (120) 		

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<ul style="list-style-type: none"> Completed market investigation of innovative pre-treatment technologies. Initiated evaluation of candidate pretreatment systems under the water purification components. (425) Completed evaluation of biocides for preservation of reverse osmosis elements. Recommended new biocide for incorporation into water purification equipment. (161) Continued high turbidity clarifier evaluation. (28) Initiated study of cleaning solutions for reverse osmosis elements. (89) 		
FY 1995 Planned Program:		
<ul style="list-style-type: none"> Fabricate two ECU prototypes, incorporating technology and components developed in previous year. (181) Conduct active noise abatement demonstration on current ECU unit. (100) Continue test and evaluation of water treatment technologies including pre-treatment, pumps, controls, and reverse osmosis elements. (484) Complete technical data package for high turbidity clarifier. (70) SBIR/STTR decrement. (18) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> Investigate commercial technology applicable to 9K BTUH ECU unit. (181) Complete evaluation of water treatment technologies. Integrate into High Capacity Purifier. (804) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Select components and complete initial ECU system design. (178) Conduct Milestone I In Process Review for Radiological Water Monitor. (100) Perform trade off analysis to determine best technical approach for Radiological Water Monitor. (222) Conduct Market Investigation of Radiological Water Monitor. (150) Hold Milestone II In-Process Review for the Water Individual Purification System. (75) Conduct Milestone I In-Process Review for Mobile Water Lab. (75) Initiate contract package for design and fabrication of Mobile Water Lab. (100) 		
DK41 - POL Distribution Equipment Advanced Development.		
FY 1994 Accomplishments:		
<ul style="list-style-type: none"> Completed Standard Army Refueling System (SARS) qualification prototypes and conducted system test (538) Completed SARS design handbook. (61) Conducted Milestone I In-Process Review for the Petroleum Quality Analysis System (PQAS). (100) 		

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<ul style="list-style-type: none"> • Prepared solicitation package for PQAS Demonstration/Validation Phase. (100) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> • Design PQAS technology demonstration model. (456) • Implement/design SARS as part of a demonstration vehicle. (100) • Prepare Milestone I IPR package for Tactical Fuel Storage and Distribution System (TFSDS), family of pumps and filter separators. (96) • SBIR/STTR decrement. (14) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> • Fabricate and initiate testing of PQAS technology demonstration model. (610) • Prepare solicitation package for PQAS EMD Phase. (100) • Conduct Milestone I IPR for TFSDS family of pumps/filter separators. (100) • Prepare solicitation package for TFSDS family of pumps/filter separators. (100) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> • Complete PQAS technology demonstration model testing. (400) • Conduct Milestone II IPR for PQAS. (100) • Design TFSDS integrated pump-filter separator. (420) 		
Acquisition Strategy: RDT&E followed by Competitive Procurement for all programs covered by DK39 & DK41.		
Project D266 - Airdrop Equipment Advanced Development: Conduct accelerated demonstration and validation of airdrop systems and equipment that will provide advanced airdrop capabilities over a range of altitudes as well as offset distances with emphasis on improved safety and greater precision, balanced with reduced vulnerability of personnel, aircraft, aircrew and equipment.		
FY 1994 Accomplishments: <ul style="list-style-type: none"> • Concluded Advanced Development and terminated Low Altitude Retrorocket System (LARRS) which was intended to reduced aircraft vulnerability. (3015) • Completed level II technical drawings for LARRS. (1007) 		

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FY 1995 Planned Program:

- Design, fabricate and begin testing prototype Enhanced Container Delivery System (ECDS) to improve accuracy, enhance load survivability and expand range of operations from high to low altitudes. (1199)
- SBIR/STTR decrement. (25)

FY 1996 Planned Program:

- Conduct combined technical/user testing of the Enhanced Container Delivery System and conclude Advanced Development effort. (1493)

FY 1997 Planned Program:

- Design, fabricate and begin technical testing of prototype Advanced Tactical Parachute System (ATPS) to improve the safety and lethality of 21st Century airborne assault operations. (1496)

Project D428 - Tactical Rigid Wall Shelter Advanced: Develop a family of tactical rigid wall shelters to enhance soldier survivability and sustainability of command, control and communications. These shelters provide highly mobile, joint service platforms for the digitization of the battlefield, medical critical care in a Chemical/Biological (C/B) environment and high tech maintenance.

FY 1994 Accomplishments:

- Completed design and fabrication of prototype HMMWV and 2-1/2 ton cargo bed covers and completed design of prototype M105 trailer cargo bed cover to improve safety, security and standardization of field-built "hooches". (759)
- Completed fabrication of the 80 decibel (dB) end-wall removable International Standardization Organization (ISO) shelter prototype to increase Electro-Magnetic Interference (EMI) protection and integration capabilities for strategic Command and Control (C2). (70)
- Completed fabrication of Large Standard Integrated Command Post System (SICPS) shelter for mobile division systems and corps C2 systems. (95)

FY 1995 Planned Program:

- Complete fabrication and begin testing of M105 cargo bed cover and complete testing of HMMWV and 2-1/2 ton cargo bed covers. (695)
- Conduct Large SICPS tests: PPQT at Aberdeen Proving Ground and FDTE at Ft. Hood. (94)
- SBIR/STTR decrement. (17)

FY 1996 Planned Program:

- Complete final design and fabrication of HMMWV and 2-1/2 ton cargo bed cover prototypes and complete testing and redesign of M105 cargo bed cover. (855)
- Develop concepts for rigid/soft hybrid shelter for enhanced deployability and habitability for soldiers and equipment. (50)
- Build and evaluate 5th wheel mounted SICPS Rigid Wall Shelter (RWS). (775)

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- Complete technical testing of large SICPS shelter, refurbish shelter, prepare manuals, begin operational test. (1900)

FY 1997 Planned Program:

- Complete final testing of HMMWV and 2-1/2 ton cargo bed cover and complete fabrication and begin retest of final design of prototype cargo bed cover for the M105 trailer. (500)
- Complete operational test, conduct Milestone I/III and type classify the Large SICPS Shelter. (900)
- Prepare contract scope of work for the rigid/soft hybrid shelter and award first phase. (482)
- Award contract for the design and development of next generation survivable SICPS RWS. (2207)

D526 - Marine Orientation Log Equipment Advanced Development

FY 1994 Accomplishments:

- Developed communication, electronics, and navigation (CEN) suites for watercraft (185)
- Developed Lighter Amphibian Resupply Cargo 60 Ton LARC XL / Roll On Roll Off Interface (278)

FY 1995 Planned Program:

- Concept development of a Containerized Machine Shop (CMS) (210)
- Proof of concept design of a transportable ocean dredge (165)
- SBIR/STTR decrement. (8)

B. Program Change Summary

Previous President's Budget	FY 1994	FY 1995	FY 1996	FY 1997
Appropriated Value	15926	5581	7924	8353
Adjustments to Appropriated Value	15926			
a. SBIR/STTR (-244)	-2317			
b. Reprogrammed (-2073)				
Current Budget Estimate Submission	13609	14664	7427	7851

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DG01

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COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG01 Combat Engineer Equipment Advanced Development	3801	9174	0	0	0	0	0	0	0	0

C. Other Program Funding Summary:

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl Cont	Total Cost Cont
RDTE, A Budget Activity 5	4623	2460	9691	10089	7999	5788	100	100		
PE 0604804A, Project DH01, Combat Engineer Equipment Engineering Development										
G82400 Heavy Dry Support Bridge							10264	10551	117112	

D. Schedule Profile:

LVSS analysis and algorithms										
LVSS design and prototype										
HDSB analysis and upgraded prototype										
HDSB Truck and Trailer study										
HDSB configurations in Bridge Company										
LVSS sensor and structure models										
LVSS final design and fabrication										
Demonstrate and test MLC 96 capability for HDSB								X		
HDSB Milestone II and EMD phase contract preparation								X		
Evaluate Medium Assault Bridge								X		

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PE NUMBER AND TITLE

4 - Demonstration And Validation

PROJECT

0603804A Logistics And Engineer Equipment -
Adv Dev

DG01

A. Project Cost Breakdown:

	FY 1994	FY 1995	FY 1996	FY 1997
Hardware Development	2671	3364		
Evaluate Medium Assault Bridge	0	3918		
Test and Evaluation	205	728		
Government Engineering and Support	695	650		
Government Program Support	120	250		
Miscellaneous	110	264		
Total	3801	9174		

B. Budget Acquisition History and Planning Information:Performing Organizations

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
TARDEC,	In-House	Various				2000	4591	0	0	0	6591
TACOM											
West Virginia University	CPFF	9502				1000	3500	0	0	0	4500
Support and Management Organizations - None											
Test and Evaluation Organizations - None											

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PE NUMBER AND TITLE

0603804A Logistics And Engineer Equipment -
Adv Dev

PROJECT

DG01

4 - Demonstration And Validation

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performin g Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Miscellaneous											
VITRO, Inc	CPFF	9403				574	0	0	0	0	574
TECOM	MIPR	9507				0	598	0	0	0	598
ARL	MIPR	9401				94	150	0	0	0	244
BRTRC, Inc	CPFF	Various				100	98	0	0	0	198
Various	CPFF	Various				33	45	0	0	0	78
Contractors											
SBIR/STTR						0	192	0	0	0	192
Total Misc						801	1083	0	0	0	1884

Government Furnished Property: N/A

Total

Prior to

FY 1994

FY 1994

FY 1995

FY 1996

FY 1997

Budget to

Complete

Total

Program

Subtotal Product Development

Subtotal Support and Management - NONE

Subtotal Test and Evaluation - NONE

Subtotal Miscellaneous

Total Project

3000

8091

801

1083

3801

9174

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4 - Demonstration And Validation

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PROJECT

DG10

	COST (in Thousands)								Total Cost
	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete
DG10 Advanced Tactical Power Sources	196	230	135	133	131	174	200	224	Continuing

C. Other Program Funding Summary: N/A

D. Schedule Profile: Project provides scientific test and evaluation to USACECOM RDEC in battery programs. Level of effort program necessitates fourth quarter milestones/reviews.

	FY 1994	FY 1995	FY 1996	FY 1997
	1	2	3	4
Prototype BA-6699 H.P. Battery				
Develop Laser Training Battery				
Develop Nickel Metal Hydride Battery				
Prototype disposable Pouch Battery		X		
Develop Second Gen. Smart Battery				
Develop Safe Lithium Recharge Battery				
Develop Rechargeable Battery & Recharger for SINGARS				
Investigate reduction of battery related disposal costs				
Develop charging station for vehicular batteries				
Field test & eval. of next gen. Lithium batteries				
Develop High Energy/High power battery for 21CLW				

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4 - Demonstration And Validation
0603804A Logistics And Engineer Equipment -
Adv Dev

PROJECT

DG10

A. Project Cost Breakdown

Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997
Test and Evaluation	186	225	135	103
SBIR/STTR Adjustment		5		30
Total	186	230	135	133

B. Budget Acquisition History and Planning Information: N/A

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4 - Demonstration And Validation

PROJECT

0603804A Logistics And Engineer Equipment -
Adv Dev

DG11

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG11 Advanced Electrical Energy Concepts Advanced Development	1506	812	227	223	220	218	300	300	Continuing	Continuing

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl Cont	Total Cost
RDT&E: PE 064804/D194	1506	1989	833	299	270	286	719	723	Cont	6625
OPA BA 3: Generators and Associated Equipment (MA9800)	24797	25206	13761	15715	15865	16493	38200	65205	Cont	215242

D. Schedule Profile

1	2	3	4	1	2	3	4	1	2	3	4

Identify critical issues as to cost, ILS and user concerns of solid state controls and composites

Initiate development of a lightweight, emerging technology 10kW APU module

Evaluate commercial state-of-art variable speed, constant frequency systems

Demonstrate & test new lightweight 5kW, 10kW & 15kW generator sets

Test variable speed constant frequency components in generator sets

Evaluate bread-board models of advanced engine technologies

Test commercial, state-of-art technologies for insertion to FY 99 buy

X

X

X

X

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DG11

<u>A. Project Cost Breakdown</u>	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Hardware Development	1200	105	110	
Test and Evaluation	90	445		100
Government Engineering and Support	105	95	50	73
Government Program Support	100	75	42	25
Miscellaneous	100	75	25	25
SBIR/STTR Adjustment		17		
Total	1595	812	227	223

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
	CPFF/TBD	2Q95	200	200		1595	812	227	223		
Support and Management Organizations - None											
Test and Evaluation Organizations - None											
Government Furnished Property: None											

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0603804A Logistics And Engineer Equipment - DG14

Adv Dev

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG14 Logistics Support Equipment Advanced Development	835	516	97	90	91	90	100	100	Continuing	Continuing

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
OPA, BA 3										
M41200 All Terrain Lifting Articulating System			14403	16589						30992
ML5365 Items Less Than \$2.0M	5816	4694	2843	2772	1827	1826	1988	1989	Cont	Cont

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
1	2	3	4	1	2	3	4	1	2
2				4	1	2	3	4	3
3									4

Delivery of 40-foot CCR prototypes X*

Initiate testing of CCRs X*

Initiate preparation of PMD for CCR Milestone II X*

Complete testing of CCR prototypes

Conduct CCR Milestone II

Contract for Visibility Improvements for forklift Carriages (VIC)

Prepare program documentation for VIC

Initiate testing of VIC prototypes

Complete testing of VIC prototypes

Complete materiel change management documentation for VIC

Complete production contract package for VIC

X

X

X

X

X

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Adv Dev

DG14

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Hardware Development	503	330		
Test and Evaluation	189	70		
Government Engineering and Support				
Government Program Support	105	105	97	90
Miscellaneous	38	11		
Total	835	516	97	90

B. Budget Acquisition History and Planning Information:Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
---	--	--------------------------------	-------------------------------	--------------------------	------------------------------	---------	---------	---------	---------	-----------------------	------------------

Product Development Organizations - None

Support and Management Organizations - None

Test and Evaluation Organizations - None

Miscellaneous	In-House	Various
TARDEC	CPFF	0193
Caterpillar, Inc	CPFF	0293
Ingersoll-Rand, Inc	MIPR	Various
TECOM		
Minor Adjustments		
SBIR/STTR		

498	435	97	90
45	0	0	0
65	0	0	0
189	70	0	0
38	0	0	0
0	11	0	0

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PROJECT

DG14

Government Furnished Property: None

Total

Prior to

F! 1994

FY 1994

FY 1995

FY 1996

FY 1997

Budget 10

Complete

Total

Program

Subtotal Product Development - None

Subtotal Support and Management - None

Subtotal Test and Evaluation - None

Subtotal Miscellaneous

Total Project

835

516

97

36

Cont

Coni

835

516

97

06

2000

3

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4 - Demonstration And Validation		0603804A Logistics And Engineer Equipment - Adv Dev								DK39	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DK39 General Support Equipment Advanced Development		984	863	985	900	1497	1482	1799	1970	Continuing	Continuing
C. Other Program Funding Summary											
RDTE, A BA 5 PE 604804A		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
DL39 General Support Equip Eng Dev		2682	1587	1649	1734	2205	2442	2199	2219	Cont.	Cont.
D. Schedule Profile											
1	Investigate alternative refrigerants & develop 36K BTUH ECU.	2	3	4	1	2	3	4	1	2	3
	Modify and test units with selected refrigerants.										
	Complete market investigation of innovative pre-treatment technologies. Initiate evaluation of candidate pretreatment systems under the water purification components.										
	Complete evaluation of biocides for preservation of reverse osmosis elements and recommend new biocide into water purification equipment.										

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PROJECT

4 - Demonstration And Validation

DK39

Adv Dev

D. Schedule Profile (continued):

	FY 1994				FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Continue high turbidity clarifier evaluation .																
Initiate cleaning solutions study for RO elements.																
Fabricate two ECU prototypes, incorporating technology and components developed in previous year.																
Conduct active noise abatement demonstration on current ECU.																
Continue T&E of water treatment technologies including pre-treatment, pumps, controls, and reverse osmosis elements.																
Complete TDP for high turbidity clarifier.																
Investigate commercial technology for 9K BTUH ECU unit.																
Complete evaluation of water treatment technologies & integrate into High Capacity Purifier.																
Select components & complete initial ECU system design.																
Conduct MSI IPR for Radiological Water Monitor.																
Perform trade off analysis to determine BTA for Radiological Water Monitor.																
Conduct MI of Radiological Water Monitor																
Conduct MSI IPR for Mobile Water Lab.																
Initiate contract package for design and fabrication of Mobile Water Lab.																

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A. Project Cost Breakdown

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
550	500	600	628
250	202	129	130
155	125	145	17
29	26	111	125
984	853	985	900

B. Budget Acquisition History and Planning Information

Performing Organizations

[illegible]

Product Development Organizations - NONE

Support and Management Organizations - NONE

Test and Evaluation Organizations - NONE

Miscellaneous

TARDEC,	In-House	Various
CECOM		
Contractors (TBD)	CPFF	9312
NFESC	MIPR	9402

Government Furnished Property: N/A

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BUDGET ACTIVITY	PE NUMBER AND TITLE						DK39
4 - Demonstration And Validation	0603804A Logistics And Engineer Equipment - Adv Dev						
	Total						
	Prior to	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete
							Program
Subtotal Product Development - NONE							
Subtotal Support and Management - NONE							
Subtotal Test and Evaluation - NONE							
Subtotal Miscellaneous			984	853	985	900	Cont
Total Project							

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BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603804A Logistics And Engineer Equipment - Adv Dev								DK41	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DK41	POL Distribution Equipment Advanced Development	799	666	910	920	941	906	999	998	Continuing	Continuing
C. Other Program Funding Summary											
RDTE, A BA 5 PE 64804											
DL41 POL Distribution Equip Eng Dev		1424	1457	1220	1070	1193	1220	1199	1197	Cont.	Cont.
D. Schedule Profile											
Complete SARS qualification prototypes and conduct system test.											
Complete SARS design handbook.											
Conduct MS I IPR for PQAS.											
Prepare solicitation package for PQAS Demonstration/Validation Phase.											
Design PQAS technology demo model.											
Implement/design SARS for demo vehicle.											
Prepare MS I IPR package for TFST'S.											
Fabricate/initiate testing of PQAS tech demo model.											
Prepare solicitation pkg for PQAS EMD Phase.											
Conduct MS I IPR for TFSDS family of pumps/filter separators.											
Prepare solicitation pkg for TFSDS family of pumps/filter separators.											
Complete PQAS technology demonstration model testing.											
Conduct MS II IPR for PQAS.											
Design TFSDS integrated pump-filter separator.											

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DATE
February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603804A Logistics And Engineer Equipment -

DK41

Adv Dev

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997	
Hardware Development	387	530	715	725	
Test and Evaluation	50	20	50	50	
Government Engineering and Support	279	91	95	95	
Government Program Support	50	25	50	50	
Miscellaneous	0	0	0	0	
Minor Adjustment	33				
Total	799	666	910	920	

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
--	--------------------------------	--------------------------	-------------------------	--------------------	------------------------	---------	---------	---------	---------	--------------------	---------------

Product Development Organizations NONE

Support and Management Organizations NONE

Test and Evaluation Organizations NONE

Miscellaneous

TARDEC	In-House	Various				329	111	135	135	cont	cont
Contractors (TBD)	CPFF	9312				433	550	765	725	cont	cont
TECOM	MPR										
TEXCOM	MPR										
ARL	MPR	9404				37	5	10	60	cont	cont

Government Furnished Property: N/A

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT		
4 - Demonstration And Validation	0603804A Logistics And Engineer Equipment - Adv Dev			DK41		
	Total					
	Prior to			Budget to		Total
	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete
Subtotal Product Development - NONE						Program
Subtotal Support and Management - NONE						
Subtotal Test and Evaluation - NONE						
Subtotal Miscellaneous	799		666	910	920	
Total Project	799		666	910	920	

Subtotal Product Development - NONE

Subtotal Support and Management - NONE

Subtotal Test and Evaluation - NONE

Subtotal Miscellaneous

Total Project

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PE NUMBER AND TITLE

0603804A Logistics And Engineer Equipment -

Adv Dev

D286	Airdrop Equipment Advanced Development	COST (in Thousands)									Total Cost
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Continuing
		4022	1224	1493	1498	1502	1507	1499	1898	Continuing	Continuing

C. Other Program Funding Summary:	N/A
--	------------

D. Schedule Profile

1	2	3	FY 1994
---	---	---	---------

FY 1995

FY 1996 3

FY 1997 3

Concluded LARRS Advanced

Development

Design and fabricate Enhanced Container

Delivery System

Conclude advanced development of the

Enhanced Container Delivery System

Design, fabricate and start testing of

Advanced Tactical Parachute System

X

X

X

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DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603804A Logistics And Engineer Equipment -

D266

Adv Dev

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Primary Hardware Development	4022	1224	1493	1496
Total	4022	1224	1493	1496

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
<u>Product Development Organizations</u>											
Natick, AAI Corp,			N/A	N/A	19,438	3,420	943	1,313	1,316	Cont	Cont
Pioneer Aerospace, Ver-Val Inc.			N/A	N/A	428	162	53	73	73	Cont	Cont
<u>Support and Management Organizations</u>											
Natick, GTS, GEO Centers			N/A	N/A	1,323	440	228	107	107	Cont	Cont
<u>Test and Evaluation Organizations</u>											
YPG, APG, EGLIN AFB, ABSOTD, TECOM			N/A	N/A							

Government Furnished Property: N/A

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE					PROJECT	
	0603804A Logistics And Engineer Equipment - Adv Dev					D266	
	Total	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Prior to							
FY 1994	19438	3420	943	1313	1316	Cont	Cont
Subtotal Product Development	428	162	53	73	73	Cont	Cont
Subtotal Support and Management	1323	440	228	107	107	Cont	Cont
Subtotal Test and Evaluation	21189	4022	1224	1493	1496	Cont	Cont
Total Project							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
4 - Demonstration And Validation										D428	
PE NUMBER AND TITLE											
0603804A Logistics And Engineer Equipment - Adv Dev											
COST (In Thousands)	FY 1984 Actual	FY 1985 Estimate	FY 1986 Estimate	FY 1987 Estimate	FY 1988 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
D428 Tactical Rightwell Shelter Advanced Development	924	808	3580	4088	2681	981	1089	1097	Continuing	Continuing	
C. Other Program Funding Summary											
OPA BA 2: Standard Integrated Command Post (BZ9962)	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost	
OPA BA 3: Standard Integrated Command Post (MX1010)	20250	9531	28914	27360	27638	24760	19884	14916	Cont	Cont	
D. Schedule Profile											
Complete design and fabrication of prototype HMMWV and 2-1/2 ton cargo bed cover	1	2	3	4	1	2	3	4	1	2	3
Begin testing of M105 cargo bed cover											
Complete TT of large SICPS shelter											
Complete testing and redesign of M105 cargo bed cover											
Complete testing of HMMWV and 2-1/2 ton cargo bed cover											
Milestone I/III and TC large SICPS shelter											

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PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603804A Logistics And Engineer Equipment -

D428

Adv Dev

A. Project Cost Breakdown:

	FY 1994	FY 1995	FY 1996	FY 1997
Primary Hardware Development	747	357	1661	2565
Test and Evaluation	0	300	1500	925
Program Management Support	177	132	419	599
SBIR/STTR Adjustment		17		
Total	924	806	3580	4089

B. Budget Acquisition History and Planning Information:

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Natick, Gitchner, Plastics Research Corp, Brunswick, DBA, Chemfab					13494	747	374	1661	2565	Cont	Cont
Support and Management Organizations											
Natick, GTS, GEO Centers					3374	177	132	419	599	Cont	Cont
Test and Evaluation Organizations											
YPG, TECOM, CSTA, TEXCOM					7229	0	300	1500	925	Cont	Cont

Government Furnished Property: N/A

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PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603804A Logistics And Engineer Equipment -

D428

Adv Dev

Total

Prior to

FY 1994

13494

FY 1994

747

FY 1995

374

FY 1996

1661

FY 1997

2565

Budget to

Complete

Cont

Total

Program

Cont

Subtotal Product Development

Subtotal Support and Management

Subtotal Test and Evaluation

Total Project

3374

7229

177

0

132

300

419

1500

599

925

Cont

Cont

Cont

Cont

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PROJECT

4 - Demonstration And Validation

0603804A Logistics And Engineer Equipment -

D526

Adv Dev

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D526 Marine Orientation Log Equipment Advanced Development	463	363	0	0	0	0	0	0	0	0

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
OPA BA 3										993
RO9800 Roll On/Roll Off Discharge Platform										
MA0900 LARC-XL SLEP							6959	6959		13918

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
1 CMS Contract Award (option)	2	3	4	1	4	2	3	4	3
In-process Review									
Concept Acceptance					X				
Dredge Contract Award (option)									
In-process Review									
Concept Acceptance					X				

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PE NUMBER AND TITLE

PROJECT
D526

4 - Demonstration And Validation

0603804A Logistics And Engineer Equipment -

Adv Dev

A. Project Cost Breakdown

Contractor Engineering and Support	FY 1994	FY 1995	FY 1996	FY 1997
Government Program Support	417	343		
	46	40		
Total	463	383		

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Miscellaneous	SS-FP					224	218				474
Support and Management Organizations											
Naval Surface Warfare Ctr						193	125				350
Test and Evaluation Organizations											

Government Furnished Property: N/A

Subtotal Product Development	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Support and Management		417	343				760
Subtotal Test and Evaluation		46	40				86
Total Project		463	383				846

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PE NUMBER AND TITLE

4 - Demonstration And Validation

0603805A Cmbt Svc Spt Comp Sys Eval And Anal

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21525	18635	13989	13581	8083	8151	0	0	Continuing	Continuing
D091 Combat Service Support Control System	20801	18096	12404	11489	6115	6157	0	0	0	138539
D246 Tactical Communications System-Advanced Development	924	448	1585	2062	1948	1894	0	0	Continuing	Continuing
D2GT CSSCS Operational Test	0	91	0	0	0	0	0	0	0	91

A. Mission Description and Budget Item Justification: Project D091, the Combat Service Support Control System, is a computer software system designed to assist the Combat Service Support (CSS) Commander and his staff to rapidly collect, store, analyze, and disseminate CSS information to support the functions of command, control and resource management. CSS control centers must provide a rapid decision support capability and supportive information to commanders more quickly than is possible with the present manual systems. This program develops the CSS battlefield functional area (BFA) node of the Army Tactical Command and Control System (ATCCS). Project D246, Tactical Communications System - Advanced Development, provides for insertion of proven communications technology from program element 0602782A, project AH92 exploratory development into advanced development. Examples of these potential programs are the Multiband, Multimode Radio, high power solid state amplifiers and couplers, and packet appliques used to increase network efficiency. Project D2GT, CSSCS Operational Test supports planned Initial Operational Test & Evaluation (IOT&E) of CSSCS. The projects in this program element include research efforts that support the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project D091, Combat Service Support Control System. The CSSCS is a computer software system designed to assist the Combat Service Support (CSS) Commander and his staff to rapidly collect, store, analyze, and disseminate CSS information to support the functions of command, control and resource management. CSS control centers must provide a rapid decision support capability and supportive information to commanders more quickly than is possible with the present manual systems. This program develops the CSS battlefield functional area (BFA) node of the Army Tactical Command and Control System (ATCCS). Acquisition strategy is to develop the system in five versions, of which two have been completed and the third completed IOT&E in September 1994. Versions 4 and 5 will be developed and fielded as annual capability packages. Versions 4 and 5 will be developed under the Army Global Command and Control System (AGCCS) contract awarded in December 1994.

FY 1994 Program Accomplishments:

- Concluded Limited User Test (LUT) (1500)
- Continued full-scale development of Version 3 (12600)
- Conducted IOT&E (3000)
- Continued prototyping Version 4 (1501)
- ATCCS III Testing Support (2000)

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0603805A Cmbt Svc Spt Comp Sys Eval And Anal

4 - Demonstration And Validation

FY 1995 Planned Program

- Complete development of Version 3 software (12930)
- Begin development of Version 4 (2400)
- Prepare documentation and conduct ASARC III & C3I Committee Review (1000)
- Prepare and conduct Version 4 PDR and CDR (1405)
- Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (361)

FY 1996 Planned Program

- Complete Version 3 software (4500)
- Continue Version 4 software development (5944)
- Conduct Version 4 Technical and Customer Tests (1000)
- Prepare and conduct PEO IPR on Version 4 (960)

FY 1997 Planned Program

- Begin development of Version 5 (8266)
- Conduct Version 5 Technical and Customer Tests (750)
- Prepare and conduct Version 5 PDR and CDR (1500)
- Prepare and conduct Version 5 PEO IPR (973)

Project D246 - Tactical Communications System - Advanced Development: The project is a smart, highly efficient, agile antenna coupler and power amplifier which is required for the Army's high frequency (HF) communications system. It permits the use of state-of-the-art automatic link establishment and electronic counter-countermeasures (ECCM) systems. Current barriers include availability, distortion and efficient linearity. All of the barriers must be overcome while maintaining reasonable size, weight, and cost. The improved coupler/power amplifier will improve communicability and enable the forces to be more mobile. This phase of the frequency agile solid state power amplifier and antenna coupler (FHPAC) effort is an advanced development follow-on to a previously completed exploratory development effort. The Global Positioning System (GPS)-derived position location information will be integrated into ATCCS using Common Hardware/Software and Single Channel Ground Airborne Radio System (SINCGARS) hardware to permit soldier/vehicle position relationships to be determined automatically.

FY 1994 Program Accomplishments:

- Delivered for Advanced Concepts Technology Frequency Agile Solid State Tuner (ACTFAST) to US Army and Air Force (400)
- Initiated procurement of second unit for performance testing (524)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
4 - Demonstration And Validation		PE NUMBER AND TITLE
FY 1995 Planned Program		0603805A Cmbt Svc Spt Comp Sys Eval And Anal
<ul style="list-style-type: none"> Procure Commercial off the shelf (COTS) Adaptive High Frequency (HF) Appliqué for field evaluation (300) Transition ACTFAST (139) SBIR/STTR (9) 		
FY 1996 Planned Program		
<ul style="list-style-type: none"> Develop Conformal Antenna (800) Evaluate COTS future data radio and non-development item (NDI/COTS) multi-band, multi-mode radio (765) 		
FY 1997 Planned Program		
<ul style="list-style-type: none"> Fabricate Advanced Development Models of Conformal Antennas - Very High Frequency (VHF) & possibly HF (1490) Develop higher data rate communication (602) 		
Project D2GT - CSSCS Operational Test, provides funding for the analysis of the PM CSSCS IOT&E test results during the first two quarters of FY 95. The final test report is required for the scheduled CSSCS ASARC III in April 95.		
FY 1995 Planned Program		
<ul style="list-style-type: none"> Analyze CSSCS IOT&E test Results/Publish Report (89) SBIR/STTR (2) 		
B. Program Change Summary		
Previous President's Budget		FY 1994
Appropriated Value		24118
Adjustments to Appropriated Value		24,118
a. SBIR/STTR(-360)		-2593
b. Reprogramming from PE (-2233)		
Current President's Budget		21525
		18635
		13969
		13581
		FY 1996
		14017
		FY 1997
		13620

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PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603805A Cmbt Svc Spt Comp Sys Eval And Anal

D091

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D091 Combat Service Support Control System	20801	18098	12404	11489	6135	6157	0	0	0	138539

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Procurement, OPA 2 (W34600)	0	5977	5915	6046	6095	6142	14914	14916	64886	124918
Spares (MA9706/BS9706)	0	1402	1360	931	317	203	199	199	1415	6026

D. Schedule Profile

	1	2	3	4	1	2	3	4	1	2	3	4
IOT&E												
ASARC III												
C3I Committee Review												
FUE V3												
IOC V3												
V4 PDR												
V4 CDR												
V4 TT												
V4 FOT&E												
V4 PEO IPR												
V5 PDR												
V5 CDR												
V5 TT												
V5 FOT&E												
V5 PEO IPR												

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PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603805A Cmbt Svc Comp Sys Eval And Anal D091

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Software Development	11109	11000	8300	7720
Program Management Support	2634	3003	1881	1803
CASS/CHS/Common Support	3113	2900	1092	1216
Operational Test and Evaluation	3745	1193	1131	750
Total	20601	*18096	12404	11489

*SBIR/STTR (361)

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
						FY 1994	FY 1995	FY 1996	FY 1997		
Product Development Organizations											
TRW	C/CPFF	7/87	15731	15731	15731	0	0	0	0	0	15731
TRW	C/CPAF	2/91	57990	58000	32823	11109	9500	4500	0	0	57932
Marlin Marietta	C/CPAF	12/94	TBD	25395	0	0	1500	3800	7720	8980	22000
CASS/Com Spt	MIPR				389	1156	2000	342	666	903	5456
Support and Management Organizations											
PM CSSCS					9804	2092	2336	1575	1426	1888	19121
CECOM	MIPR				540	166	204	94	115	86	1205
EER/VITRO	MIPR				1225	376	463	212	262	196	2734
Test and Evaluation Organizations											
GOVT	MIPR				262	1677	1118	1061	695	0	4813
EPG/CAC	MIPR				170	68	75	70	55		438
OITEC						2000					2000

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4 - Demonstration And Validation 0603805A Cmbt Svc Spt Comp Sys Eval And Anal

Government Furnished Property

Contract

Item Description	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property										
CHS - TRW	MIPR			1444	757	900	750	550	300	4701
Support and Management Property										
Test and Evaluation Property										
CHS-1Cav&2AD	MIPR			1208	1200	0	0	0	0	2408

Support and Management Property: None

Test and Evaluation Property

CHS-1Cav&2AD MIPR

Total

Prior to

FY 1994

Subtotal Product Development

Subtotal Support and Management

Subtotal Test and Evaluation

Total Project

•SBIR/STTR (361)

50387	13022	13900	9392	8936	10183	105820
11569	2634	3003	1881	1803	2170	23060
1640	4945	1193	1131	750	0	9659
63596	20601	*18096	12404	11489	12353	138539

Prior to

FY 1994

FY 1994

FY 1995

FY 1996

FY 1997

Budget to Complete

Total Program

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603805A Cmbt Svc Spt Comp Sys Eval And Anal

D246

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D246 Tactical Communications System-Advanced Development	924	448	1565	2092	1948	1994	0	0	Continuing	Continuing

C. Other Program Funding Summary Not Applicable

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
1	2	3	4	1	4	1	4	1	2
AEL ACTFAST Award									
AEL ACTFAST Test									
Simulator Award		X*							
ADHF Award		X*							
ADHF Test									
Phase I Conformal Antenna Award (VHF)									
COTS/NDI MBMR Award									
Phase I Conformal Antenna Test									
COTS/NDI MBMR Test									
FDR/NDI Award									
Phase II Conformal Antenna Award									
FDR/NDI Test									
Phase II Conformal Antenna Test									

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RDT&E PROGRAM ELEMENT: ROJECT COST BREAKDOWN (R-3)

DATE February 1995

BUDGET ACTIVITY

REF NUMBER AND TITLE

4 - Demonstration And Validation

0603805A Cmbt Svc Spt Comp Sys Eval And Anal

A. Project Cost Breakdown

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Primary Hardware Development				900
Development Support Equipment Acquisition	331	100		
Ancillary Hardware Development	385	75	787	386
Government Engineering Support	185	23	173	165
Travel	23	8	94	55
Miscellaneous	0	13	196	155
Technical Data		19		
Developmental Test & Evaluation		30	315	331
Operational Test & Evaluation				100
Program Management Support		85		
Contract Engineering Support		95		
Total	924	*448	1565	2092

◆SBIR/STTR (9)

B. Budget Acquisition History and Planning Information

Performing Organizations												
Contractor or Government	Contract	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations												
AEL		Task Order	NA	NA	NA	0	600	0	0	0	Cont	Cont
Adaptive HF		Task Order	NA	NA	NA	0	0	95	0	0	Cont	Cont
Conformal Ant		Task Order	NA	NA	NA	0	0	0	343	0	Cont	Cont
COTS NDI MBMR			NA	NA	NA	0	0	0	344	0	Cont	Cont
FDR NDI		Base Ops	NA	NA	NA	0	0	0	0	900	Cont	Cont
Conformal Ant-HF		Task Order	NA	NA	NA	0	0	0	0	386	Cont	Cont

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603805A Cmbt Svc Spt Comp Sys Eval And Anal

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Support and Management Organizations											
Lincoln Labs	MIPR	NA	NA	NA	NA	0	100	0	0	Cont	Cont
S&T Comm	MIPR	NA	NA	NA	NA	324	253	878	806	Cont	Cont
Test and Evaluation Organizations: None											
Government Furnished Property Not Applicable											
Total											
Prior to FY 1994						FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
						600	95	687	1286	Cont	Cont
						324	353	878	806	Cont	Cont
						924	*448	1565	2092	Cont	Cont
Subtotal Product Development											
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project											
*SBIR/STTR (9)											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603805A Cmbt Svc Spt Comp Sys Eval And Anal

PROJECT D2GT

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2GT CSSCS Operational Test	0	91	0	0	0	0	0	0	0	91

C. Other Program Funding Summary Not Applicable

D. Schedule Profile

Perform Analysis - PM CSSCS IOT&E Data

1	FY 1994 2	FY 1995 2	FY 1996 2	FY 1997 3	FY 1998 4	FY 1999 1	FY 2000 4	FY 2001 1	FY 1997 2	FY 1997 3	FY 1997 4

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE
BUDGET ACTIVITY										February 1995
PE NUMBER AND TITLE										
0603806A NBC Defense Systems - Advance Development										
4 - Demonstration And Validation										
Development										
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	36131	15072	0	0	0	0	0	0	Continuing	Continuing
DE80 NBC Individual Protection	5536	0	0	0	0	0	0	0	Continuing	Continuing
DE81 NBC Decontamination Systems	3000	4808	0	0	0	0	0	0	Continuing	Continuing
D801 NBC Contamination Avoidance Systems	21277	8623	0	0	0	0	0	0	Continuing	Continuing
D804 NBC Protection Systems	6318	1480	0	0	0	0	0	0	Continuing	Continuing
<p>A. Mission Description and Budget Item Justifications: The NBC weapons threat to U.S. Forces has shifted from a bi-polar confrontation with the former Soviet Union to contingencies involving Third World Nations. The House Armed Services Committee Report Countering the Chemical and Biological Weapons Threat in the Post-Soviet World, dated January 1993, concluded that effective NBC defense measures, to include detection and protective equipment, provide a deterrent to enemy CB weapons use. Projects support development and demonstration testing of radiological and chemical/biological/toxin agent detection and warning systems; individual and collective protection systems; decontamination solutions and equipment, and addresses various shortcomings identified in Conduct of the Persian Gulf War. Final Report to Congress, April 1992. This program element focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of chemical/biological defense equipment advance development and is correctly placed in Budget Activity 4.</p> <p>This program was transferred to a Defense Program Element (PE 0604384BP) starting in FY 96 pursuant to Congressional direction in Public Law 103-160, Title XVII.</p> <p>DE80 NBC Individual Protection: Provides for Demonstration/Validation (DEMVAL) for the XM45 Aircrew Protective Mask (ACPM). The ACPM will replace the M43 Type II and M43A1 Type II aviators mask and will eliminate air crew dependency on forced air while providing compatibility with aircraft and night vision systems.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> ACPM - Conducted Milestone II In Process Review (IPR) (100) ACPM - Designed and Fabricated of test articles (4429) ACPM - Technical Data Package Prepared (1007) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> No Planned Program 										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603806A NBC Defense Systems - Advance Development	
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Program transferred to PE 0603884BP/DE80. <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Program transferred to PE 0603884BP/DE80. <p>DE81 NBC Decontamination System: Funding supports the Modular Decontaminating System (MDS), a more transportable, less labor intensive, and more effective system for applying decontaminating solutions to vehicle and equipment surfaces. Lessons learned from Desert Storm validated the need for a deployable and efficient decontamination system. The MDS reduces water usage and equipment processing time with increased water pressure and variable water temperature. The MDS consists of the XM21 Decontaminate Pumper Module and the XM22 High Pressure Washer Module. A Milestone I/II Decision was approved in Dec 93. Funding also supports the Sorbent Technology program which provides a reactive Sorbent for immediate decontamination. It will replace the M295 Kit, for personal wipedown procedures and Decontaminating Solution 2 (DS-2) in operator spraydown procedures. The Sorbent will be more reactive towards Chemical Warfare (CW) agents than the M295 Kit, therefore, the hazard associated with the spent decontaminate will be reduced. The Sorbent will be more compatible with Mission Oriented Protective Posture (MOPP) and other materials that currently use DS2.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • MDS - Conducted MS I/II IPR (40) • MDS - Completed early Engineering Design Test on XM21 (947) • MDS - Initiated Engineering Design Tests (1160) • MDS - Awarded Integrated Logistics Support (ILS) Contract for XM22 (853) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • MDS - Complete Engineering Tests (1691) • MDS - Fabricate Test Hardware (1274) • MDS - Conduct Pre-Production Qualification Test (PPQT) (900) • MDS - Conduct Critical Design Review (1000) • SBIR/STTR (104) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Program transferred to PE 0603884BP/DE81. 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603806A NBC Defense Systems - Advance Development		
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Program transferred to PE 0603884BP/DE81. <p>D601 NBC Contamination Avoidance Systems: This project provides Demonstration Validation (DEMVAL) of Reconnaissance, Detection, and Identification (RDI) equipment. Items of equipment included in this project are: (1) Lightweight Standoff Chemical Agent Detector (LSCAD) which provides chemical agent detection and mapping for chemical agent clouds; (2) Chemical Biological Mass Spectrometer (CBMS) which identifies all chemical and biological agents collected and is a component of the Nuclear, Biological and Chemical Reconnaissance System (NBCRS) and the Biological Integrated Detection System (BIDS); and (3) Biological Detector (BD), a point detector for threat biological agents which is also a component of the BIDS and is under management of the Joint Program Office for Biological Defense (JPO-BIO). All of these systems increase existing chemical and biological war fighting capabilities by providing more complete, accurate, and current battlefield data.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • CBMS - Initiated Bioprofiling (2000) • CBMS - Initiated Design Modifications (Software, Aerosol Sampler Interface) (4000) • CBMS - Fabricated Prototype Hardware (2487) • Marine Corps-Transferred Funding to meet Congressional Intent (5959) • JPO-BIO - Completed feasibility test and evaluation for Biological Detector (6831) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • CBMS - Complete Bioprofiling (300) • CBMS - Initiate Chemical Profiling (500) • CBMS/BIDS - Complete Design Modifications (3882) • CBMS - Conduct Engineering Test (1200) • CBMS - Fabricate Technical Feasibility Test/Limited User Test (TFT/LUT) Hardware (2560) • SBIR/STTR (181) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Program transferred to PE 0603884BP/D601. <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Program transferred to PE 0603884BP/D601. 			

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DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603806A NBC Defense Systems - Advance
Development

D604 NBC Protection Systems: The project provides for development of the Advanced Integrated Collective Protective System (AICPS). The AICPS will integrate NBC filtration environmental controls and power source components for tactical and combat systems and exploit new filtration technology (regenerable filtration, catalytic oxidation or deep bed chromium-free carbon). The effort extends vehicular collective protection applications providing for reductions in system size, weight, energy and in filter change logistics burden. The AICPS can be integrated into multiple configurations to provide protection to different tactical systems. Additionally, the effort provides a system solution for countering future threat agents and alleviating the disposal problems associated with hazardous material impregnated carbon filters.

FY 1994 Accomplishments:

- AICPS - Awarded Development Contract for improved collective protective systems for multi-tactical systems (3775)
- AICPS - Developed Design Concepts for integration (1546)
- AICPS - Conducted User Interface and System Integration evaluation for different platforms (997)

FY 1995 Planned Program:

- AICPS - Conduct prototype filter testing (140)
- AICPS - Initiate Engineer Design Filter Test (140)
- AICPS - Continue Engineering Support (1169)
- SBIR/STTR (31)

FY 1997 Planned Program:

- Program transferred to PE 0603884BP/D604.

FY 1997 Planned Program:

- Program transferred to PE 0603884BP/D604.

B. Program Change Summary:

	FY 1994	FY 1995
Previous President's Budget	40903	13778
Appropriated Value	40903	15072
Adjustments to Appropriated Value	-4772	
a. SBIR/STTR decrement	(633)	
b. Reprogrammed out of PE	(4139)	
Current Budget Submit/President's Budget	36131	15072

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603806A NBC Defense Systems - Advance Development								DE80	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE80 NBC Individual Protection		5538	0	0	0	0	0	0	0	Continuing	Continuing

C. Other Program Funding Summary:

RDTE, A Budget Activity 5 PE 0604806 Project	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Total
D017 NBC Protection Systems	170	9050							Cost Cont'd

D. Schedule Profile:

ACPM - Design and Fabrication	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Total
ACPM - TDP Preparation	1	2	3	4	1	2	3	4	Cost Cont'd
ACPM - Milestone II IPR	X*								X*

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603806A NBC Defense Systems - Advance

DE80

Development

A. Project Cost Breakdown:

	FY 1994	FY 1995
Government Engineering Support	1905	
Hardware Development	2600	
Integrated Logistics Support	175	
Quality Assurance	150	
Technical Data	100	
Testing	100	
Design	325	
Documentation	181	
Total	5536	0

B. Budget Acquisition History and Planning Information: Not Applicable.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995																					
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT																						
4 - Demonstration And Validation		0603806A NBC Defense Systems - Advance Development								DE81																						
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost																					
DE81	NBC Decontamination Systems	3000	4989	0	0	0	0	0	0	Continuing	Continuing																					
<p>C. Other Program Funding Summary: Not Applicable.</p> <p>D. Schedule Profile:</p> <table> <thead> <tr> <th></th> <th>FY 1994</th> <th>FY 1995</th> </tr> </thead> <tbody> <tr> <td>MDS Conduct Milestone I/II</td> <td>1 2 3 4</td> <td>2 3 4</td> </tr> <tr> <td>MDS Design Test</td> <td>X*</td> <td></td> </tr> <tr> <td>MDS Award XM22 Contract</td> <td></td> <td>X*</td> </tr> <tr> <td>MDS Start EDT</td> <td></td> <td>X*</td> </tr> <tr> <td>MDS Complete EDT</td> <td></td> <td>X</td> </tr> <tr> <td>MDS Start PPQT</td> <td></td> <td>X</td> </tr> </tbody> </table>													FY 1994	FY 1995	MDS Conduct Milestone I/II	1 2 3 4	2 3 4	MDS Design Test	X*		MDS Award XM22 Contract		X*	MDS Start EDT		X*	MDS Complete EDT		X	MDS Start PPQT		X
	FY 1994	FY 1995																														
MDS Conduct Milestone I/II	1 2 3 4	2 3 4																														
MDS Design Test	X*																															
MDS Award XM22 Contract		X*																														
MDS Start EDT		X*																														
MDS Complete EDT		X																														
MDS Start PPQT		X																														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
4 - Demonstration And Validation	0603806A NBC Defense Systems - Advance Development	DE81	

A. Project Cost Breakdown:

	FY 1994	FY 1995
MDS Development Engineering	1293	1403
MDS Producability Engineering	308	353
MDS Prototype Manufacturing	370	243
MDS Systems Test & Evaluation	314	1298
MDS Training	25	41
MDS Technical Data Package	690	527
MDS Critical Design Review		1000
SBIR/STTR		104
Total	3000	4969

B. Budget Acquisition History and Planning Information: Not Applicable

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT		
4 - Demonstration And Validation		0603806A NBC Defense Systems - Advance Development								D601		
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
D601 NBC Contamination Avoidance Systems		21277	8623	0	0	0	0	0	0	0	Continuing	
C. Other Program Funding Summary												
RDTE, A Budget Activity 2, PE 0602622A, Project A53 CB Defense & General Investigation		FY 1994 35529	FY 1995 29614	To Total Compl Cont'd								
RDTE, A Budget Activity 5 PE 0604806A, Project D020 NBC Contamination Avoidance		42285	9469	Cont'd		Cont'd						
RDTE, D Budget Activity 7, PE 06073724D, Joint Biological Defense Program			52895			52895						
Other Procurement, Army, OPA-3 M93000, BIDS			14583			14583						
D. Schedule Profile												
CBMS Award Contract		FY 1994		FY 1995								
CBMS Bioprofiling		X*	X*									
CBMS Engineering Design Test						X X						
CBMS Fabrication for TFT/LUT						X X						
Bio Detector (BD) Feasibility Test			X*									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603806A NBC Defense Systems - Advance

D601

Development

A. Project Cost Breakdown:

CBMS Design	FY 1994	FY 1995
CEMS Fabrication	4000	3882
CEMS Test (including Bioprofiling)	2487	1060
CBMS Documentation	2000	2000
BD Engineering Design		1500
BD Technical Data/Documentation	2696	
BD Fabrication	2265	
BD Test and Evaluation	1725	
Marine Corps (MC)	145	
SBIR/STTR	5959	
Total	21277	8623

B. Budget Acquisition History and Planning Information:Performing Organizations

Contract or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	Budget to Complete	Total Program
Product Development Organizations									
Bruker	C/CPFF	Nov 93	7800	7800		2600	4901	299	7800
ETG	SS/CPFF	Mar 94	1800	1800		1800			1800
STC	C/FP	Apr 94	145	145		145			145
Others		Nov 93				1534			1534
Support and Management Organizations									
Govt CBDCOM		Oct 93	10172	10172		7318	1741	1113	10172
Marine Corps	MIPR	Mar 94				5959			5959
Test and Evaluation Organizations									
TECOM	MIPR	Jan 94	2300	2300		500	1800		2300
WSMR	MIPR	Oct 93	78	78		78			78

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

D601

4 - Demonstration And Validation

0603806A NBC Defense Systems - Advance

Development

Contractor or

Government

Performing

Activity

DPG

Dahlgren

MICOM

USACMLS

BRDEC

ARL

Contract

Method/Type

or Funding

Vehicle

MIPR

MIPR

MIPR

MIPR

MIPR

Award or

Obligation

Date

Mar 94

Jan 94

Feb 94

Apr 94

Dec 93

Oct 93

Performing

Activity

EAC

390

50

745

40

10

78

Project

Office

EAC

390

50

745

40

10

78

Total

Prior to

FY 1994

390

50

745

40

40

78

FY 1995

Budget to

Complete

Program

390

50

745

40

40

78

Total

Program

390

50

745

40

40

78

Government Furnished Property: None.

Total

Prior to

FY 1994

FY 1994

6079

FY 1995

4901

Budget to

Complete

Total

Program

11279

16131

3721

31131

Subtotal Product Development

Subtotal Support and Management

Subtotal Test and Evaluation

Total Project

*Does not include SBIR/STTR (181)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603806A NBC Defense Systems - Advance

D604

Development

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D604 NBC Protection Systems	6318	1480	0	0	0	0	0	0	Continuing	Continuing

C. Other Program Funding Summary:

	FY 1994	FY 1995	To Compl Cont'd	Total Cost Cont'd
RDTE,A Budget Activity 5 PE 0604806A Project	170	9050		
D017 NBC Protection Systems				

D. Schedule Profile:

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001
1	2	3	4	1	2	3	4	
		X*						
			X*					
				X				
					X			
						X		
							X	
								X
								X

AICPS Awarded Development Contract
 AICPS Developed Design Concept
 AICPS Initiate Prototype Fabrication
 AICPS Prototype Filter Testing
 AICPS Test Engineering Design Filter
 Test
 AICPS Engineering Support
 AICPS Initiate Engineering Design Test
 (EDT)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)			DATE	February 1995	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE				D604
4 - Demonstration And Validation	0603806A NBC Defense Systems - Advance Development				
A. <u>Project Cost Breakdown:</u>					
Hardware Development	FY 1994	FY 1995			
Producability	1546				
System Engineering	300				
Training Development	3275	1169			
Integrated Logistics Support	50				
Quality Assurance	300				
Reliability, Maintainability, and Availability	300				
Configuration Management	50				
Technical Data	497				
EDT		280			
PPQT		31			
SBIR/STTR		1480			
Total	6318				
B. <u>Budget Acquisition History and Planning Information:</u>					
Performing Organizations					
Contractor or Government	Method/Type	Award or Obligation Date	Performing Activity	Project Office	Total
Performing Activity	Vehicle	Date	EAC	EAC	Program
Product Development Organizations					
Loral Librascope	C/CPFF	Jun 94	37/5	3775	3775
Support and Management Organizations					
Govt CBDCOM	PO	Oct 94	3992	3992	3992
Government Furnished Property: None.					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995																																																
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																																																	
4 - Demonstration And Validation	0603806A NBC Defense Systems - Advance Development	D604																																																	
<table border="1"> <thead> <tr> <th></th> <th>FY 1994</th> <th>FY 1994</th> <th>FY 1995</th> <th>Budget to Complete</th> <th>Total Program</th> </tr> </thead> <tbody> <tr> <td>Total</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Prior to</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 1994</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Subtotal Product Development</td> <td>3775</td> <td></td> <td>0</td> <td>0</td> <td>3775</td> </tr> <tr> <td>Subtotal Support and Management</td> <td>2543</td> <td></td> <td>1449</td> <td>0</td> <td>3992</td> </tr> <tr> <td>Subtotal Test and Evaluation</td> <td>0</td> <td></td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Total Project</td> <td>6318</td> <td></td> <td>1449*</td> <td>0</td> <td>7767</td> </tr> </tbody> </table>					FY 1994	FY 1994	FY 1995	Budget to Complete	Total Program	Total						Prior to						FY 1994						Subtotal Product Development	3775		0	0	3775	Subtotal Support and Management	2543		1449	0	3992	Subtotal Test and Evaluation	0		0	0	0	Total Project	6318		1449*	0	7767
	FY 1994	FY 1994	FY 1995	Budget to Complete	Total Program																																														
Total																																																			
Prior to																																																			
FY 1994																																																			
Subtotal Product Development	3775		0	0	3775																																														
Subtotal Support and Management	2543		1449	0	3992																																														
Subtotal Test and Evaluation	0		0	0	0																																														
Total Project	6318		1449*	0	7767																																														
<p>*Does not include SBIR/STTR (31)</p>																																																			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE
BUDGET ACTIVITY										February 1995
PE NUMBER AND TITLE										
4 - Demonstration And Validation										
0603807A Medical Systems Advanced Development										
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21480	18439	10576	10571	9778	9268	9824	9810	Continuing	Continuing
D808 DoD Drug and Vaccine-Advanced Development	7745	7254	3853	3870	3918	3887	3864	3858	Continuing	Continuing
D809 Medical Biodefense Drug/Vaccine	5525	0	0	0	0	0	0	0	0	5525
D811 Military HIV Vaccine and Drug-Advanced Development	1838	191	2671	2729	2011	1516	2114	2111	Continuing	Continuing
D836 Combat Medical Materiel-Advanced Development	920	2823	2734	3008	2982	2976	2863	2959	Continuing	Continuing
D837 Soldier System Protection-Advanced Development	0	0	1218	864	857	889	883	882	Continuing	Continuing
D993 Medical Defense Against Chemical Threats *	5454	6071	0	0	0	0	0	0	0	11525

* Starting in FY 1996, funding has been consolidated into PE 0604384BP in accordance with P.L. 103-160.

A. Mission Description and Budget Item Justification: This program element (PE) funds the advanced development of medical materiel necessary to field an effective capability for medical defense against chemical warfare agents and infectious diseases. Starting in FY 1996, funding for chemical and biological defense medical research and development efforts (project D993) have been consolidated into PE 0604384BP in accordance with P.L. 103-160. Products developed will provide for maximum soldier survivability and enhanced sustainability of performance in an environment contaminated with chemical and biological threat. The PE funds Advanced Development (AD) of systems for medical protection against naturally occurring diseases and Human Immunodeficiency Virus (HIV). This includes development and initial human testing of vaccines, arthropod vector repellents, prophylactic and therapeutic drugs, rapid identification and diagnostic systems for disease/biological agents. Additionally, the PE supports AD of field medical equipment and drugs essential for combat casualty care on a high intensity battlefield while reducing logistical support requirements. The PE also funds AD systems which provide measurement of or protection against physiological and psychological factors affecting cognitive and physical performance imposed by military systems, combat operations or the environment. This includes AD of vision corrective devices, environmental health monitoring and medical water quality monitoring equipment. Systems include resuscitators, blood substitutes, field x-ray, and field production of medical grade oxygen. This program is primarily managed by the U.S. Army Medical Research and Materiel Command. This PE focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of medical materiel and is properly placed in Budget Activity 4.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603807A Medical Systems Advanced Development		
<p>Project D808-DoD Drug and Vaccine-Advanced Development: This project funds demonstration and validation of candidate medical countermeasures such as vaccines and drugs through safety, immunogenicity, and small scale efficacy testing in volunteers against naturally occurring infectious diseases of mission aborting potential. Work performed in laboratories and among troop populations is directed to prevention, diagnosis and treatment of viral, bacterial and parasitic disease, so as to prevent casualties, sustain operational performance and minimize deaths and disability of armed forces during military operations. Some major contractors are The Salk Institute, Swiftwater, PA, University of Illinois, Chicago, IL, South Florida Research Institute, Miami, FL, and Kenya Medical Research Institute, Nairobi, Kenya.</p>			
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted Phase 1/2 trials of malaria blood stage vaccine. (2304) • Conducted Phase 1 trial of recombinant hemorrhagic fever with renal syndrome (Hantaan) vaccine. (1327) • Conducted Phase 1 dosing studies of Rift Valley Fever live vaccine. (1131) • Conducted toxicity testing and field trials with candidate repellents. (1159) • Evaluated human safety and efficacy for antimalarial drugs Halofantrine and WR238605. (1824) 			
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct Phase 1/2 trials of malaria vaccine Spf66. (1023) • Conduct Phase 1 safety trials with Rift Valley Fever live vaccine. (206) • Evaluate human safety and efficacy of antimalarial drugs Halofantrine, WR238605, and azithromycin. (2240) • Complete Phase 2 trials of Shigella flexneri 2a-2 vaccine. (447) • Conduct Phase 2 trials of recombinant hemorrhagic fever with renal syndrome (Hantaan) vaccine. (344) • Conduct Phase 1/2 trials of Campylobacter vaccine. (663) • Continue Phase 2 clinical study of antileishmanial drug WR 6026. (245) • Initiate pilot production and testing of vaccines for clinical studies. (1601) • Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases. (333) • Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. (152) 			
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Continue safety and efficacy trials of antimalarial drugs, azithromycin, Halofantrine, WR238605 and antileishmanial drug WR6026. (2105) • Conduct expanded Phase 2 trials of a malaria blood stage vaccine. (1083) • Complete Phase 2 testing of the recombinant Hantaan vaccine. (144) • Complete Phase 1/2 trials of the campylobacter vaccine. (566) • Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases. (55) 			

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RD&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603807A Medical Systems Advanced Development	
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Continue to evaluate safety and efficacy of antimalarial drugs WR238605 and halofantrine. (2177) • Conduct Phase 2 testing of the Group B meningococcal vaccine. (1153) • Conduct Phase 1/2 testing of a recombinant vaccine against hemorrhagic fever renal syndrome caused by puumala virus. (480) • Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases. (160) <p>Project D809-Medical Biological Defense Drug and Vaccine-Advanced Development: This project funds exploratory research on the development of vaccines and drugs to provide an effective medical defense against validated threat agents including bacteria, viruses and other agents of biological origin. By employing biotechnology, medical systems will be designated to rapidly identify, diagnose, prevent, and treat casualties resulting from exposure to biological threat agents.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted trials of cell culture derived smallpox vaccine (2787) • Conducted Phase 1 trials of Type F Botulinum toxoid (1974) • Conducted Phase 1 safety trial of Botulism Immune Globulin (Human) (409) • Conducted non-cGMP Botulinum toxoid Type G production (355) <p>FY 1995 Planned Program: Program restructured to PE 0208051A, Joint Biological Defense Program</p> <p>FY 1996 Planned Program: Project not funded</p> <p>FY 1997 Planned Program: Project not funded</p> <p>Project D811-Military HIV Vaccine and Drug-Advanced Development: This project funds the Congressionally-mandated, militarily relevant HIV research for demonstration and validation of candidate vaccines and drugs through safety, immunogenicity and small scale efficacy testing and behavioral intervention in volunteers. Efforts are directed to answer militarily unique needs affecting manning, mobilization and deployment.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Evaluated vaccines to protect against and treat HIV. (1836) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Evaluate vaccines to protect against and treat HIV. (187) • Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. (4) 		

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ROD&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
4 - Demonstration And Validation	0603807A Medical Systems Advanced Development	
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Transition a vaccine to advanced development to prevent the progression of Acquired Immune Deficiency Syndrome in individuals infected with Human Immunodeficiency Virus. (2671) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Conduct Phase 1 studies of the vaccine for the prevention of progression of Acquired Immune Deficiency syndrome in individuals infected with Human Immunodeficiency Virus. (2401) • Transition to advanced development a vaccine for the prevention of infection with the Human Immunodeficiency Virus. (328) <p>Project D836-Combat Medical Materiel-Advanced Development: The project supports advanced development of new and improved systems essential for battlefield casualty care, patient transport and evacuation, and return to duty in support of special contingency and conventional force operations. Primary civilian contractors are University of Illinois, Chicago, IL and Ohemda Corp., Chicago, IL.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted non-clinical efficacy studies of microencapsulated antibiotic, ampicillin. (74) • Fabricated three prototype armored ambulance medical interiors incorporating advanced commercial lifesaving equipment. (397) • Prepared contract for the upgrade of the Field Anesthesia Machine to meet FDA requirements. (174) • Evaluated concepts for development of an automated system to reconstitute frozen blood. (97) • Modified military and commercial medical equipment to facilitate patient examination and diagnosis. (178) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conclude ongoing pre-clinical studies and terminate microencapsulated antibiotic ampicillin. (215) • Develop an automated system to deglycerolize frozen blood. (81) • Conduct air-worthiness certification of self-contained ventilator. (117) • Initiate market investigation for intravenous infusion device. (49) • Conduct technical evaluation of the medical-dental filmless imaging system (277) • Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts for the treatment of combat casualties. (2123) • Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. (61) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Evaluate silver nylon burn dressing for treatment of combat casualties. (106) • Complete prototype electrochemical sterilization system. (287) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603807A Medical Systems Advanced Development	
<ul style="list-style-type: none"> • Complete evaluation of dental filmless imaging system. (316) • Evaluate concepts for development of expert medical systems for trauma management. (58) • Initiate market investigation for far forward suction device. (67) • Modify US and allied military and commercial medical equipment used for patient examination, diagnosis and treatment in the field; incorporate technological advances into field medical equipment as they come on-line. (483) • Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts for the treatment of combat casualties. (1417) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Conduct human safety studies of a microencapsulated antibiotic (cephalosporin) and a silver nylon burn dressing for treatment of combat casualties. (737) • Conduct user and technical testing of a system for life support and trauma transport. (367) • Evaluate alternative concepts of a combat stress analysis system (285) • Modify US and allied military and commercial medical equipment used for patient examination, diagnosis and treatment in the field; incorporate technological advances into field medical equipment as they come on-line. (928) • Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts for the treatment of combat casualties. (691) <p>Project D837-Soldier System Protection-Advanced Development: This project supports demonstration and validation of preventive medicine materiel, including devices, pharmacologicals and other tools, to provide protection, sustainment, and enhancement of the physiological and psychological capabilities of soldiers in the face of combat operations under all environmental conditions. Focus is on reduction in the incidence of personnel losses due to preventable disease and non-battle injuries through development of environmental and physiological performance monitors and other preventive medicine countermeasures.</p> <p>FY 1994 Accomplishments: Project not funded</p> <p>FY 1995 Planned Program: Project not funded</p> <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Develop coupling attachments for feasibility study on M-40 protective mask blower as an improved air circulation source for chemical warfare agent protective patient wrap; develop alternative air sources using non-developmental item acquisition strategy. (1218) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Conduct physiological testing of candidate air circulation source for chemical warfare agent protective patient wrap. (864) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																																			
BUDGET ACTIVITY	PE NUMBER AND TITLE																																				
4 - Demonstration And Validation	0603807A Medical Systems Advanced Development	February 1995																																			
<p>Project D993-Medical Defense Against Chemical Threats: This project funds advanced development of countermeasures for chemical agents including life support equipment, pretreatment and therapeutic drugs, and individual/casualty decontamination compounds. A system of medical defense against chemical agents is required to provide individual soldiers protection, to sustain their performance in a chemical environment, and to provide for self-aid and medical treatment of chemical casualties. Major contractors include Battelle Memorial Institute, Columbus, OH, SRJ International, Menlo Park, CA, and University of Illinois, Chicago, IL.</p>																																					
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Completed pre-clinical studies of the nerve agent antidote system, HI-6. (2413) Conducted testing for the prototype multichambered autoinjector. (1248) Conducted human safety studies of the topical skin protectant. (1221) Evaluated commercial products for use within the chemical protective patient wrap for improved air circulation. (572) 																																					
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Conduct human safety studies of the nerve agent antidote, HI-6. (1970) Conduct human safety studies of topical skin protectant. (1658) Conduct technical testing of the multichambered autoinjector. (1183) Test commercial products for use in the chemical protective patient wrap. (1193) Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. (67) 																																					
<p>FY 1996 Planned Program: Project moved to DoD PE 0604384BP.</p>																																					
<p>FY 1997 Planned Program: Project moved to DoD PE 0604384BP.</p>																																					
<p>B. Program Change Summary</p> <table border="1"> <thead> <tr> <th></th> <th>FY 1994</th> <th>FY 1995</th> <th>FY 1996</th> <th>FY 1997</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget</td> <td>21628</td> <td>17495</td> <td>15614</td> <td>15582</td> </tr> <tr> <td>Appropriated Value</td> <td>21628</td> <td>16439</td> <td></td> <td></td> </tr> <tr> <td>Adjustments to Appropriated Value</td> <td>-148</td> <td></td> <td></td> <td></td> </tr> <tr> <td>a. SBIR/STTR (-310)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>b. Reprogramming total (162)</td> <td>21480</td> <td>16439</td> <td>10576</td> <td>10571</td> </tr> <tr> <td>Current President's Budget Submit</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				FY 1994	FY 1995	FY 1996	FY 1997	Previous President's Budget	21628	17495	15614	15582	Appropriated Value	21628	16439			Adjustments to Appropriated Value	-148				a. SBIR/STTR (-310)					b. Reprogramming total (162)	21480	16439	10576	10571	Current President's Budget Submit				
	FY 1994	FY 1995	FY 1996	FY 1997																																	
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a. SBIR/STTR (-310)																																					
b. Reprogramming total (162)	21480	16439	10576	10571																																	
Current President's Budget Submit																																					
<p>Changes to FY 1996/FY 1997: Funding for chemical and biological defense efforts (project D993) has been consolidated into PE 0604384BP in accordance with P.L. 103-160.</p>																																					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603807A Medical Systems Advanced

Development

PROJECT

D808

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D808 DoD Drug and Vaccine-Advanced Development	7745	7254		3653	3970	3918	3887	3884	3858	Continuing

C. Other Program Funding Summary: Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.

	FY 1994		FY 1995		FY 1996		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002	
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Malaria Spf66 MLST 2																		
Campylobacter MLST 1																		
MLST 2 IPR																		
Puumala MLST 1 IPR																		
Hantaan MLST 2 IPR																		
Rift Valley MLST1																		
MLST 2																		
Shigella Flexner 2a-2 MLST 2																		
Shigella sonnei MLST 1																		
Antimalarial Drug WR238605 MLST 2																		
Antimalarial Drug WR6026 MLST 2																		
Antimalarial Drug Azithromycin MLST																		
0/1, MLST 2																		
Antimalarial Drug Halofantrine MLST 1,																		
MLST 2																		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603807A Medical Systems Advanced
Development

D808

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Test & Evaluation	5644	4633	3212	2970
Product Development	1788	2634	232	653
Project Management	623	611	529	367
Total	8055	7878	3973	3990

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
<u>Product Development Organizations</u>											
Contracts	NA	NA	NA	NA	NA	NA	639	0	0	Cont	Cont
Salk Institute	CPFF	APR 1988	50556	50556	42176	1149	2301	232	653	Cont	Cont
<u>Support and Management Organizations</u>											
USAMMDA	NA	NA	NA	NA	NA	453	384	343	235	Cont	Cont
Contracts	NA	NA	NA	NA	NA	170	227	186	132	Cont	Cont
<u>Test and Evaluation Organizations</u>											
Walter Reed Army Inst of Research	NA	NA	NA	NA	NA	2324	2018	1990	950	Cont	Cont
Army Laboratories	NA	NA	NA	NA	NA	360	582	374	100	Cont	Cont
Navy Laboratories	NA	NA	NA	NA	NA	370	0	500	0	Cont	Cont
Government Furnished Property: None											
Subtotal Product Development					NA	1788	2634	232	653	Cont	Cont
Subtotal Support and Management					NA	623	611	529	367	Cont	Cont
Subtotal Test and Evaluation					NA	5644	4633	3212	2970	Cont	Cont
Total Project					NA	8055	7878	3973	3990	Cont	Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603807A Medical Systems Advanced Development								D809	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D809 Medical Biodefense Drug/Vaccine		5525	0	0	0	0	0	0	0	0	0
C. Other Program Funding Summary: Not Applicable											
D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

4 - Demonstration And Validation

0603807A Medical Systems Advanced
Development

PROJECT

D809

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Test & Evaluation	5940	0	0	0
Product Development	4901	0	0	0
Project Management	421	0	0	0
Total	5916	0	0	0

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Salk Institute	CPFF	Apr 88	50556	50556	42176	1409	0	0	0	0	0
Contracts	NA	NA	NA	NA	NA	3492	0	0	0	0	0
Support and Management Organizations											
USAMMDA	NA	NA	NA	NA	NA	286	0	0	0	0	0
Contracts	NA	NA	NA	NA	NA	135	0	0	0	0	0
Test and Evaluation Organizations											
Army Laboratories	NA	NA	NA	NA	NA	417	0	0	0	0	0
Contracts	NA	NA	NA	NA	NA	177	0	0	0	0	0
Government Furnished Property: None											
Subtotal Product Development					NA	4901	0	0	0	0	0
Subtotal Support and Management					NA	421	0	0	0	0	0
Subtotal Test and Evaluation					NA	594	0	0	0	0	0
Total Project					NA	5916	0	0	0	0	0

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

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BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603807A Medical Systems Advanced
Development

PROJECT

D811

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D811 Military HIV Vaccine and Drug-Advanced Development	1836	191	2671	2729	2011	1516	2114	2111	Continuing	Continuing

C. Other Program Funding Summary: Not Applicable**D. Schedule Profile:** Multiple medical developmental products will advance through various events throughout the FY.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
4 - Demonstration And Validation	0603807A Medical Systems Advanced Development	D811	

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Test & Evaluation	1821	193	2684	2743
Product Development	0	0	0	0
Project Management	15	0	0	0
Total	1836	193	2684	2743

B. Budget Acquisition History and Planning Information**Performing Organizations**

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations: None											
Support and Management Organizations											
Contract	NA	NA	NA	NA	NA	15	0	0	0	0	0
Test and Evaluation Organizations											
Army Laboratories	NA	NA	NA	NA	NA	250	0	0	0	0	0
Contracts	NA	NA	NA	NA	NA	1571	193	2684	2743	Cont	Cont
Government Furnished Property: None											
Subtotal Product Development					NA	0	0	0	0	0	0
Subtotal Support and Management					NA	15	0	0	0	0	0
Subtotal Test and Evaluation					NA	1821	193	2684	2743	Cont	Cont
Total Project					NA	1836	193	2684	2743	Cont	Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603807A Medical Systems Advanced Development								D836	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D836	Combat Medical Materiel-Advanced Development	920	2923		2734	3008	2892	2876	2863	2959	Continuing
C. Other Program Funding Summary: Not Applicable											
D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.											
		FY 1994		FY 1995		FY 1996		FY 1997			
		1	2	3	4	1	2	3	4	1	2
	Silver Nylon Burn Dressing MLST 1										
	Microencapsulated Antibiotic										
	Cephalosporin MLST 0/1										
	Self-Contained Ventilator MLST 1 IPR										
	Medical-Dental Filmless Imaging System										
	MLST 2 IPR										
	Intraseous Infusion Device MLST 2 IPR										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603807A Medical Systems Advanced Development								D837	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D837	Soldier System Protection-Advanced Development	0	0	1218	864	857	889	883	882	Continuing	Continuing
C. Other Program Funding Summary: Not Applicable											
D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603807A Medical Systems Advanced

D837

Development

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997	
Test & Evaluation	0	0	0	0	
Product Development	0	0	1172	848	
Project Management	0	0	52	20	
Total	0	0	1224	868	

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Contracts	NA	NA	NA	NA	NA	0	0	1172	848	Cont	Cont
Support and Management Organizations											
USAMMDA	NA	NA	NA	NA	NA	0	0	52	868	Cont	Cont
Test and Evaluation Organizations: None											
Government Furnished Property: None											
Subtotal Product Development					NA	0	0	1172	848	Cont	Cont
Subtotal Support and Management					NA	0	0	52	20	Cont	Cont
Subtotal Test and Evaluation					NA	0	0	1224	868	Cont	Cont
Total Project											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
4 - Demonstration And Validation		0603807A Medical Systems Advanced Development								D993	
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D993 Medical Defense Against Chemical Threats		5454	6071	0	0	0	0	0	0	0	0
C. Other Program Funding Summary: Not Applicable											
D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration And Validation

0603807A Medical Systems Advanced

D993

Development

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Test & Evaluation	2516	3620	0	0
Product Development	1583	638	0	0
Project Management	1355	1813	0	0
Total	5454	6071	0	0

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations	NA	NA	NA	NA	NA	1583	638	0	0	Cont	Cont
Contracts	NA	NA	NA	NA	NA	1305	1328	0	0	Cont	Cont
Support and Management Organizations	NA	NA	NA	NA	NA	50	485	0	0	Cont	Cont
USAMMDA	NA	NA	NA	NA	NA	311	345	0	0	Cont	Cont
Contracts	NA	NA	NA	NA	NA	875	1555	0	0	Cont	Cont
Test and Evaluation Organizations	NA	NA	NA	NA	31706	1330	1720	0	0	Cont	Cont
Army Laboratories	NA	NA	NA	NA	NA	1583	638	0	0	Cont	Cont
Contracts	NA	NA	NA	NA	NA	1355	1813	0	0	Cont	Cont
Battelle Mem Lab	CPFF	Jan 89	44549	44549	NA	2516	3620	0	0	Cont	Cont
Government Furnished Property: None					NA	5454	6071	0	0	Cont	Cont
Subtotal Product Development					NA						
Subtotal Support and Management					NA						
Subtotal Test and Evaluation					NA						
Total Project					NA						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604201A Aircraft Avionics								DC97	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC97	Aircraft Avionics	735.8	14238	22044	2037	1389	1384	0	0	0	48430
<p>A. Mission Description and Budget Item Justification: This PE funds the development of avionics systems required to horizontally and vertically integrate the battlefield (commonly referred to as "digitization of the battlefield"). The following tasks in this Program Element support research efforts in the engineering and manufacturing development phases of these digitization of the battlefield systems and are therefore correctly placed in Budget Activity 5.</p> <p>Project DC97 - Aircraft Avionics:</p> <ul style="list-style-type: none"> The Global Positioning System (GPS) provides Army aviation with extremely accurate and secure location and velocity information critical to navigation, target acquisition, fire support, assessment of enemy deployments, and logistical support. It also provides Global Time settings for communication systems and assists in situational awareness and prevention of fratricide. The RDT&E efforts address the Army aircraft weight, space and power limitations by embedding a GPS circuit card into existing onboard avionics systems and the Embedded Inertial Navigation System (EGI) (Air Force lead) for attack and scout aircraft. The AN/ARC-220 NOE Communications High Frequency (HF) radio provides a long-range (300 kilometers) nap-of-earth (NOE), non-line-of-sight digital and voice communication capability which is reliable, secure, easy to operate, with automatic link establishment and electronic counter-countermeasures. The AN/ARC-220 will be form/fit interchangeable with the AN/ARC-199 HF radio, meet military standards for compatibility with the 1553 data bus, night vision lighting, data transmission, and shipboard operations. The Army Airborne Command And Control System (A2C2S) functions as a highly mobile command post. When mounted in the UH-60 helicopter with auxiliary equipment, it provides tactical voice, data, and imagery digitized battlefield communications both in secure and nonsecure modes for corps, division, and brigade commanders. The system provides battle commanders access to critical situational awareness and off-board national asset intelligence information via satellite communications. It also provides digitized battlefield communications links with Army combined arms team members, joint service and combined force elements, channel scanning, and intercommunications facilities for up to six operators, and joint interoperability as well as maritime and air traffic control communications. The A2C2S is in response to real world needs of combat maneuver commanders to perform highly mobile and responsive digital, voice, and imagery command and control (C2) functions in the UH-60 Helicopter. The UH-60 A2C2S system will enable the commander and essential staff to remain highly mobile with the capability to intercept critical C2 across the designated battle area without sacrificing access to information products or jeopardizing continuity of operations due to command post relocation. Interoperability is enhanced with this system by providing the capability to communicate digitally with Navy or Air Force close air support as well as relaying target information. This system will allow Army aviation forces access to C2 and situational awareness information for conduct of close, deep, rear, and security operations. The A2C2S is used to provide C2 for disaster relief, peacekeeping, and interdiction, and both low and high intensity conflict missions. The A2C2S will play a major role in eliminating costly fratricide incidents via the capability to closely monitor and control operations. Satellite communications provide access to tactical communication systems and enables communication with the force and command structure from JCS down to battalion when required. 											
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Initiated Engineering and Manufacturing Development (EMD) of the AN/ARC-220 NOE Communications HF Radio (2108) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604201A Aircraft Avionics		DC97
<ul style="list-style-type: none"> Initiated the following for A2C2S: <ul style="list-style-type: none"> Enhanced Communications Interface Technology (ECIT) / Work Station Design: Prototype and demonstrate (1652) Command, Control and Communication Risk Reduction Study (1100) Antenna Study and Antenna Prototypes (800) Program Management (906) Procure Multi-Application Tactical Terminal and Commander's Situational Awareness Workstation (580) Aircraft System Integration Demonstration Support (212) 			
FY 1995 Planned Program:			
<ul style="list-style-type: none"> Continue AN/ARC-220 NOE Communications HF Radio EMD Effort (4858) Initiate Preproduction Qualification and continue Project Management Support for AN/ARC-220 NOE Communications HF Radio (885) Conduct Non-Recurring Engineering for EGI AH-64C/D (300) Complete AH-64C/D Engineering Change Proposal EGI Integration (3400) Continue A2C2S ECIT/Work Station Design: Prototype and Demonstration (4600) SBIR/STTR (195) 			
FY 1996 Planned Program:			
<ul style="list-style-type: none"> Complete AN/ARC-220 NOE Communications HF Radio EMD Effort (2706) Initiate Integration Contract for Design of A Kit and Testing for AN/ARC-220 NOE Communications HF Radio (2101) Continue Program Management support for the AN/ARC-220 (507) Initiate development of Enhanced ECIT: 6 A2C2S prototypes (6250) Continue Design and Develop A2C2S Workstation Consoles (3450) Develop Technical Documentation: Test & Integration procedures for A2C2S Engineering Development Model (EDM) (700) Develop A2C2S Workstation Software (3175) Continue development of A2C2S Antenna System - Phase II (400) Initiate Test and Demonstration - A2C2S EDM (880) Continue Program Management support for the A2C2S (1875) 			
FY 1997 Planned Program:			
<ul style="list-style-type: none"> Continue A2C2S Development, Test and Demonstration of Enhanced ECIT (1790) Continue Program Management Support for the A2C2S Program (247) 			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February 1995				
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604201A Aircraft Avionics									
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
US Aviation and Troop Command											
Test and Evaluation Organizations: N/A											
Government Furnished Property: - Not Applicable											
Subtotal Product Development						5344	13353	19662	1790	Con't	Con't
Subtotal Support and Management						2014	885	2382	247	Con't	Con't
Subtotal Test and Evaluation						0	0	0	0	0	0
Total Project						7358	14238	22044	2037	Con't	Con't

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 1995

BUDGET ACTIVITY		PE NUMBER AND TITLE										PROJECT	
5 - Engineering And Manufacturing Development		0604220A Kiowa Warrior										D538	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D538	Crew Station Mission Equipment Trainer (CSMET)	0	0	726	1194	0	0	0	0	0	1920		

A. Mission Description and Budget Item Justification. The Crew Station Mission Equipment Trainer (CSMET) is a desktop simulation training device that will be designed to support training requirements for the OH-58D Kiowa Warrior flight crew. The CSMET effort responds to the lack of Training Devices, Simulators or Simulations (TDSS) available to fielded Kiowa Warrior units. Currently, the aircraft itself provides the only primary sustainment training device. Training provided through the use of the actual aircraft is at best limited due to the inability to employ total system capabilities under combat conditions (i.e., weapon systems, etc.). When the actual aircraft are not available the aviator cannot continue to practice crew skills and as such the aircrew skills continue to decay rapidly. Maintaining a high level of aircrew skill has direct impact on combat readiness and proficiency. The CSMET is a New Start. The project in this Program Element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is, therefore, correctly placed in Budget Activity 5.

Project D538 - Crew Station Mission Equipment Trainer (CSMET): The Crew Station Mission Equipment Trainer (CSMET) will train crew members in the operation and employment of the Kiowa Warrior mission equipment package. Simulations systems will include the weapons systems, aviation survivability equipment, automatic target handover system, communication and navigation equipment, mast mounted sight cockpit controls, and the pilot display unit. The CSMET will network with other simulation devices for collective training.

FY 1994 Accomplishments: Project not funded

FY 1995 Planned Program: Project not funded

FY 1996 Planned Program:

- Award Development Contract (726)
 - Initiate Development of Prototype Device
- FY 1997 Planned Program:**
- Complete Prototype Build/System Integration (748)
 - Conduct Joint Preliminary Developmental Testing (148)
 - Conduct Final Developmental/Operational Testing (298)

FY 1997 Planned Program:

- Complete Prototype Build/System Integration (748)
- Conduct Joint Preliminary Developmental Testing (148)
- Conduct Final Developmental/Operational Testing (298)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604220A Kiowa Warrior								D538	
B. Program Change Summary											
Previous President's Budget		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
Appropriated Value		0	0	0	0	0	0	0	0	Compl	Cost
Adjustments to Appropriated Value											
Current Budget Submit/President's Budget		0	0	726	1194					N/A	16720
C. Other Program Funding Summary: There are no other related RDTE efforts.											
APA Budget Activity 2		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
AZ2200 Kiowa Warrior (CSMET)					430	2840	7130	3950	2370	N/A	16720
D. Schedule Profile											
Award Development Contract		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997	
1	2	3	4	1	2	3	4	1	2	3	4
Initiate Development of Prototype Device											
Complete Qualification Testing											
Begin Prototype Build/System Integration											
Conduct Preliminary Joint Developmental Testing											
Complete Final Developmental Testing/Operational Testing											
Prototype Delivery											
Ready for Training											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development		0604220A Kiowa Warrior			D538
A. Project Cost Breakdown					
Engineering Development					
Prototype Build/System Integration					
Developmental Testing					
Government Support of Developmental Testing					
Operational Testing					
Government Support of Operational Testing					
Total					
	FY 1994	FY 1995	FY 1996	FY 1997	
			726	748	
				119	
				29	
				199	
				99	
			726	1194	
B. Budget Acquisition History and Planning Information					
Performing Organizations					
Contractor or Government	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total
Activity	Vehicle	Date	EAC	EAC	Prior to FY 1994
Product Development Organizations					
STRICOM	MIPR	JAN 96	726	726	0
Orlando, FL	MIPR	JAN 97	1194	1194	0
(Contractor TBD)					
Support and Management Organizations: N/A					
Test and Evaluation Organizations: N/A					
Government Furnished Property - Not Applicable					
Subtotal Product Development				726	1194
Subtotal Support and Management					
Subtotal Test and Evaluation				726	1194
Total Project					1920

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development 0604223A Comanche

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	365185	485587	198103	298609	298270	398349	424774	533138	Continuing	Continuing
DC72 T800 Engine Engineering Development (LH)	45248	80162	39835	39840	39827	39834	39871	39813	Continuing	Continuing
D327 Comanche	319836	408405	182288	261789	261443	361515	387803	498225	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element provides for the development and operational testing and evaluation of the RAH-66 Comanche and the T800 growth engine. The Comanche is a multi-mission aircraft optimized for the critical battlefield mission of tactical armed reconnaissance. It provides a globally self-deployable attack platform for light/contingency forces. Comanche is the solution to the reconnaissance deficiencies (no night/adverse weather/high/low/stand-off capability) and is a key component on the digitized battlefield in winning the information war. The Comanche will replace the obsolescent Vietnam era fleet (AH-1, OH-6, and OH-58A/C). Project DC 72 provides for development and qualification of the T800 and growth engines and air vehicle support for integration of the same into the Comanche aircraft. Project D327 provides for development of the airframe, mission equipment package, and integration of the whole system to include training and logistic support. The projects in this program element support research efforts that complete Demonstration/Validation (Dem/Val) prototype efforts and transition into the engineering and manufacturing development phase of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project DC72 - T800 Engine Engineering Development (LH): This project includes tasks to design, develop and qualify an advanced technology engine. The project is for the development of a growth T800 engine, utilizing the technology developed and qualified on the 1200 SHP class baseline T800 engine. The growth engine is for the Army's new RAH-66 Comanche and other applications.

FY94 Accomplishments:

- Continued growth engine engineering development/First Engine to Test (38925)
- Completed delivery of basic flight test engines
- Continued basic engine air vehicle support (6324)

FY 95 Planned Program

- Continue growth engine development (57854)
- Conduct growth engine Critical Design Review (CDR)
- Continue basic engine air vehicle support (10700)
- Continue engine development testing (9941)
- SBIR/STTR (1667)

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RT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		0604223A Comanche	
FY 96 Planned Program			
<ul style="list-style-type: none"> • Continue basic engine air vehicle support (8900) • Continue growth engine development (18357) • Continue engine development testing (9578) 			
FY 97 Planned Program			
<ul style="list-style-type: none"> • Continue basic engine air vehicle support (8600) • Continue growth engine development (15343) • Continue engine development testing (12897) 			
<p>Project D327 - Comanche: The Comanche helicopter is a highly sustainable and operationally flexible air cavalry system, incorporating significant reductions in personnel and support equipment, capturing the latest combat technologies and capable of accepting upgrades to meet ever-changing threats. It will dominate the battlefield in the close, deep and rear operations; provide a decisive air cavalry capability in day, night, and adverse weather. It will be operationally tailorable to regional conflicts and provide the battle commander with timely, detailed reconnaissance information and an unprecedented level of lethality.</p>			
FY 94 Accomplishments			
<ul style="list-style-type: none"> • Continued Demonstration/Validation (Dem/Val) prototype engineering development (200586) • Continued contractor development test (71320) • Continued air vehicle manufacturing (48030) 			
FY 95 Planned Program			
<ul style="list-style-type: none"> • Continue Dem/Val prototype engineering development (276210) • Continue contractor development test (85999) • Continue air vehicle construction (37708) • SBIR/STTR (8488) 			
FY 96 Planned Program			
<ul style="list-style-type: none"> • Begin digitization effort (16232) • Continue Dem/Val prototype engineering development (98972) • Conduct first flight, prototype # 1 (38258) • Continue manufacturing of prototype # 2 (8806) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																																								
BUDGET ACTIVITY		February 1995																																								
5 - Engineering And Manufacturing Development																																										
PE NUMBER AND TITLE		0604223A Comanche																																								
FY 97 Planned Program																																										
<ul style="list-style-type: none"> • Continue digitization effort (26028) • Continue Dem/Val prototype engineering development (175901) • Continue flight test program for prototype # 1 (57387) • Complete manufacturing of prototype # 2 (2453) 																																										
<table border="0"> <thead> <tr> <th></th> <th>FY 1994</th> <th>FY 1995</th> <th>FY 1996</th> <th>FY 1997</th> </tr> </thead> <tbody> <tr> <td>B. Program Change Summary</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Previous President's Budget</td> <td>366728</td> <td>525182</td> <td>373977</td> <td>499242</td> </tr> <tr> <td>Appropriated Value</td> <td>366728</td> <td>488567</td> <td>199103</td> <td>298609</td> </tr> <tr> <td>Adjustments to Appropriated Value (Total PE)</td> <td>(1543)</td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. SBIR/STTR decrement (-5542)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> b. Reprogrammed into PE (3999)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Current Budget Submit/President's Budget</td> <td>365185</td> <td>488567</td> <td>199103</td> <td>298609</td> </tr> </tbody> </table>				FY 1994	FY 1995	FY 1996	FY 1997	B. Program Change Summary					Previous President's Budget	366728	525182	373977	499242	Appropriated Value	366728	488567	199103	298609	Adjustments to Appropriated Value (Total PE)	(1543)				a. SBIR/STTR decrement (-5542)					b. Reprogrammed into PE (3999)					Current Budget Submit/President's Budget	365185	488567	199103	298609
	FY 1994	FY 1995	FY 1996	FY 1997																																						
B. Program Change Summary																																										
Previous President's Budget	366728	525182	373977	499242																																						
Appropriated Value	366728	488567	199103	298609																																						
Adjustments to Appropriated Value (Total PE)	(1543)																																									
a. SBIR/STTR decrement (-5542)																																										
b. Reprogrammed into PE (3999)																																										
Current Budget Submit/President's Budget	365185	488567	199103	298609																																						
<p>Change Summary Explanation:</p> <p>Funding: FY 96 (\$-174M) and FY 97 (\$-199M) funding has been reduced from the previous submittal IAW Department of Defense (DoD) decision to restructure the program.</p> <p>Schedule: The current schedule is presently being reviewed. Schedule may be revised after senior level approval of the program.</p> <p>Technical: None</p>																																										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

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BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604223A Comanche

PROJECT

DC72

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC72 T800 Engine Engineering Development (LH)	45249	80162	36835	36840	36827	36834	36971	36913	Continuing	Continuing

C. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
1	2	3	4	1	2	3	4	1	2
First engine to test									
Completed delivery of basic flight test engines	X*								
Continued basic engine air vehicle support			X						
Continue growth engine development									
Continue engine development testing									
Conduct growth engine CDR									
Award change order to accommodate DoD direction				X					
Continue basic engine air vehicle support									
Continue growth engine development									
Continue engine development testing									
Continue basic engine air vehicle support									
Continue growth engine development									
Continue engine development testing									

X
X
X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	PROJECT		
BUDGET ACTIVITY		PE NUMBER AND TITLE											
5 - Engineering And Manufacturing Development		0604223A Comanche											
		FY 1994	FY 1995	FY 1996	FY 1997								
A. Project Cost Breakdown													
Product Development		44898	79917	36635	36640								
Program Management Support		351	245	200	200								
Government Furnished Personnel/Equipment/Facilities		0	0	0	0								
Test & Evaluation		0	0	0	0								
Total		45249	80162	36835	36840								
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Contractor or Government	Contract Method/Type	Award or Obligation Date	Performing Activity	EAC	Project Office	EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations													
LHTEC (0453)	C/CPFF	April 92	TBD	TBD	TBD	TBD	46451	44086	79217	36635	36640	Cont	Cont
LHTEC (B017)	C/FFP	Jul 85	TBD	TBD	TBD	TBD	275884	812	700	0	0	0	Cont
AVCO (B019)	C/FFP	Nov 84	128526	128526	128526	128526	128526	0	0	0	0	0	128526
Support and Management Organizations													
Comanche PMO & MIPR							12042	117	191	150	150	Cont	Cont
Gov't Agencies													
PATS contracts	C/FFP		TBD	TBD	TBD	TBD		54	54	50	50	Cont	Cont
Rail	C/FFP	Sep 87	TBD	TBD	TBD	TBD	2626	180	0	0	0	Cont	Cont
Test and Evaluation Organizations													
Gov't Agencies	MIPR						9613	0	0	0	0	Cont	Cont

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY			PE NUMBER AND TITLE								
5 - Engineering And Manufacturing Development			0604223A Comanche								
Government Furnished Property											
Cont. Act											
Item	Method/Type	Award or	Delivery								
	or Funding	Obligation	Date								
Description	Vehicle	Date	Date	FY 1994	FY 1995	FY 1996	FY 1997	Budget to	Total		
Product Development Property: None											
Support and Management Property											
Gov't Agencies MIPR											
Test and Evaluation Property: None											
Total				13129	0	0	0	Cont	Cont		
Subtotal Product Development											
Total				450861	79917	36635	36640	Cont	Cont		
Prior to				FY 1994	FY 1995	FY 1996	FY 1997	Budget to <td>Total</td> <td colspan="2"></td>	Total		
Subtotal Support and Management				44898	245	200	200	Cont	Cont		
Subtotal Test and Evaluation				351	0	0	0	Cont	Cont		
Total Project				9613	80162	36835	36840	Cont	Cont		
				488271							
NOTE: A Defense Acquisition Board review of the program is scheduled for March 1995.											

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NOTE: A Defense Acquisition Board review of the program is scheduled for March 1995.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PROJECT									
5 - Engineering And Manufacturing Development		D327									
		PE NUMBER AND TITLE									
		0604223A Comanche									
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D327 Comanche		319936	408405	162268	261769	261443	361515	387803	466225	Continuing	Continuing
<u>C. Other Program Funding Summary</u>		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
APA							0	0	0	Cont	Cont
A08300 Comanche											
0604816A Longbow Engineering Development		105314	34522								384022
Project DC13, Hellfire Seeker		79839	22479								761795
Project DC27 Longbow Engineering Dev											
<u>D. Schedule Profile</u>											
Critical Design Review		1									
Continued Dem/Val prototype engineering development		X*									
Continued contractor development test			X*								
Continue air vehicle manufacturing			X								
Continue Dem/Val prototype engineering development			X								
Award change order to accommodate DoD direction											
Update TEM/P											
Continue Dem/Val prototype engineering development											
Begin digitization effort											
Conduct First Flight, Prototype # 1											
Continue digitization efforts											
Continue Dem/Val prototype engineering development											
Continue flight test program											
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604223A Comanche

PROJECT
D327**A. Project Cost Breakdown**

	FY 1994	FY 1995	FY 1996	FY 1997
Product Development	302764	376822	142268	241769
Program Management Support	16836	29673	17000	17000
Government Furnished Personnel/Equipment/Facilities	89	400	1000	1000
Test and Evaluation	247	1510	2000	2000
Total	319936	408405	162268	261769

B. Budget Acquisition History and Planning Information**Performing Organizations**

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Boeing Sikorsky	C/CPIF	April 91	TBD	TBD	1040080	302764	376822	142268	241769	Cont	Cont
JPO A004					370288	0	0	0	0	0	370288
Other Completed Contracts											

Support and Management Organizations

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Rail	C/FFP	Sep 87	TBD	TBD	21736	5358	5454	3000	3000	Cont	Cont
HSI	C/FFP	Oct 91	12236	12236	6164	2972	3100	0	0	0	12236
PATS contracts	C/FFP		TBD	TBD	0	0	0	0	0	Cont	Cont
Other Contracts	C/FFP		TBD	TBD	5547	1823	1535	1000	1000	Cont	Cont
PMO/Gov't Agencies	MIPR				50632	6683	19584	13000	13000	Cont	Cont
Test and Evaluation Organizations											
Gov't Agencies	MIPR				6032	247	1510	2000	2000	Cont	Cont

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DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604223A Comanche

Government Furnished Property

Contract

Item Description Method/Type or Funding Vehicle Award or Obligation Date Delivery Date

Product Development Property: None

Support and Management Property

Other Gov't

Agencies

Test and Evaluation Property: None

Total
Prior to
FY 1994

FY 1994

FY 1995

FY 1996

FY 1997

Budget to
CompleteTotal
Program

9729

89

400

1000

1000

Cont

Cont

Total
Prior to
FY 1994

FY 1994

FY 1995

FY 1996

FY 1997

Budget to
CompleteTotal
Program

1410368

302764

376822

142268

241769

Cont

Cont

93808

16925

30073

18000

18000

Cont

Cont

6032

247

1510

2000

2000

Cont

Cont

1510208

319936

408405

162268

261769

Cont

Cont

NOTE: A Defense Acquisition Board review of the program is scheduled for March 1995.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604270A Electronic Warfare Development									
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	83070	91914	65222	72379	48344	27457	18628	18681	Continuing	Continuing	
DL12 Electronic Warfare Development:	42304	50652	14077	16972	16746	10220	10410	11971	Continuing	Continuing	
DL15 Army Reprogramming and Analysis Team	0	3948	2885	3980	4477	3732	0	0	0	19122	
DL16 TROJAN Development (TIARA)	0	0	545	1333	1410	1484	0	0	0	4772	
DL18 High Value Asset Defense System	2838	4991	7698	10249	0	0	0	0	0	25776	
D811 Tactical Deception-Army Wide	1947	0	0	0	0	0	0	0	0	1947	
D885 A/C Surv Equip Dev	35981	32323	39917	39845	25711	12021	8218	8710	0	200728	
A. Mission Description and Budget Item Justification: This program element encompasses engineering and manufacturing development for tactical electronic warfare (EW), signals warfare (SW), aircraft survivability equipment (ASE), battlefield deception, rapid software reprogramming and protection of personnel and equipment from hostile artillery. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program provide the Army with the capability to degrade or deny hostile forces the effective use of their communications, counter mortar/counterbattery radars, surveillance radars, infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in the face of threat technical advancements. This program element satisfies requirements for brigade, division, corps and higher commanders to conduct electronic warfare to meet tactical and Special Electronic Mission Aircraft (SEMA) requirements, attach/scout, and assault/cargo mission requirements. Signals Warfare Development provides for an integrated ground-based and helicopter Intelligence and Electronic Warfare Common Sensor (IEWCS) System. The High Value Asset System will provide effective protection of personnel and equipment from electronically fused munitions. TROJAN developments will complete Proof-of-Principle R&D for specific TROJAN applications in advanced threat signals processing and prototype software upgrades; high frequency (HF) algorithms for compact antenna array technology (CAT) configured into small aperture antenna arrays; search and acquisition capabilities for unattended signal collectors; and new digital intelligence collection, processing and dissemination technology. The projects in this PE are in the Engineering and Manufacturing Development phase of the acquisition strategy and are therefore correctly placed in Budget Activity 5.											
Project DL12 - Electronic Warfare Development:											
1. This project provides for Engineering and Manufacturing Development (E&MD) and testing of Intelligence and Electronic Warfare Common Sensor (IEWCS) Subsystems and Systems leading to Milestone III. The Subsystems are:											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
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5 - Engineering And Manufacturing Development	0604270A Electronic Warfare Development	
<p>a. The TACJAM-A will enhance the Division Commander's ability to outmaneuver and kill the enemy by isolating and suppressing enemy fire control and command and control (C²) nets at critical points in the battle; provide electromagnetic overmatch of the threat C² spectrum inclusive of both conventional and modern frequency hopping modulations, freeze the enemy in place by jamming C²; and eliminate enemy counterfire by locating High Value Targets (HVT's) for targeting. TACJAM-A consists of state-of-the-art modular and scalable Electronic Support Measures (ESM) and Electronic Countermeasures (ECM) subsystems configured for use on a variety of air and ground prime movers (tracked, wheeled and helicopter).</p> <p>o. The CHALS-X provides the targeting capability required to support the Division Commander's requirement to locate and kill the enemy by providing location of high value targets. Airborne systems mixed with ground based systems will be capable of precisely locating enemy weapon systems and units (regardless of whether the enemy uses conventional or modern radios) producing target locations sufficiently accurate for first round fire for effect by organic artillery.</p> <p>c. The CMES (Common Modular ELINT System) provides search, intercept, Direction Finding (DF), precision location and analysis of the primary non-communication (radar) battlefield threat emitters. While operating in a fully automatic mode it will enhance the Division Commander's ability to out maneuver and kill the enemy by specifically identifying HVTs such as enemy counter/mortar, counter/battery ground surveillance radars at critical points in the battle and will provide precise emitter locations with targeting accuracy.</p> <p>2. This project also provides for the integration of Common Sensor subsystems into 3 Army Systems, for the development of platform unique items (i.e. antennas), and for the modification of standard Army vehicles to meet intelligence and electronic warfare requirements. The Army systems are:</p> <p>a. Ground Based Common Sensor-Light (GBCS-L). The GBCS-L provides support to the Commanders of Airborne, Air Assault, and Light Infantry Divisions with an organic capability to listen to, precisely locate for hard-kill or order-of-battle resolution, or render ineffective through electronic attack, threat command and control and fire control communications nets and identify and precisely locate threat counter/mortar and counterbattery ground surveillance radar emissions. The system is specifically designed to ensure transportability, prime mover maintainability, and mobility equal to, or greater than, that of the supported divisions and regiments, while exploiting or eliminating - at the Commander's discretion - the latest, most modern types of hostile modulations and transmission techniques at the key time and place on the battlefield. GBCS-L is configured on High Mobility Multipurpose Wheeled Vehicle (HMMWV).</p> <p>b. Ground Based Common Sensor-Heavy (GBCS-H). The GBCS-H provides support to the Commanders of Armored and Mechanized Infantry Divisions and Armored Cavalry Regiments (ACR) the same capability as the above GBCS-L. The GBCS-H, however, is the Army's only on-the-move, on-the-ground, all weather, all terrain, self-contained, fully integrated, 24-hour-a-day signals intelligence and electronic attack asset. The GBCS-H is configured on a derivative of the Bradley Fighting Vehicle, the Electronic Fighting Vehicle System (EFVS) which is being developed in concert with the Command and Control Vehicle (C²V).</p> <p>c. Advanced Quickfix (AQF). The AQF provides for a material change to the existing helicopter QUICKFIX communications intercept, collection, processing, direction finding, and jamming system and will be deployed to Army Divisions and ACR. Configured in a BLACKHAWK Helicopter (EH-60A), it provides the moving platform necessary to provide for location accuracies sufficient for "steel on target" requirements, as well as for extension of radio Line of Sight (LOS) against target emitters.</p> <p>3. The United States Marine Corps is utilizing the same subsystems as the GBCS and configuring them in a Light Armored Vehicle as a part of the Mobile Electronic Warfare Support System (MEWSS) improvement program.</p> <p>4. This project is joint with the National Security Agency's Defense Cryptologic Program (DCP), Program Element #030885G, which provides a portion of the funds required for the development of the precision location subsystem and system integration of GBCS-L and GBCS-H.</p>		

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5 - Engineering And Manufacturing Development

0604270A Electronic Warfare Development

FY 1994 Accomplishments:

- Resumed TACJAM-A ECM E&MD program to include System CDR (21344)
- Completed development of TACJAM-A ESM E&MD subsystem (2080)
- Code and tested CHALS-X frequency hopper software (3440)
- Continued GBSCS/AQF Integration effort to include conducting Special In-Process Review and Contractor Test (15440)

FY 1995 Planned Program:

- Conduct Low Rate Initial Production (LRIP) Special In-process Review (SIPR) (87)
- Continue TACJAM-A ECM Development (21618)
- Complete, integrate and test CHALS-X frequency hopper software (2995)
- Continue GBSCS/AQF Integration effort (20900)
- Conduct Block I operational capabilities expansion for GBSCS/AQF:
 - Incorporate TACJAM-A ECM
 - Incorporate CHALS-X frequency hopper software
 - Onboard ELINT/COMINT Correlation
 - Provide for generation of automatic reporting and tasking messages
 - Additional Embedded Training
 - Improve Disc Management capability
 - Add a maintenance log capability
 - Sensor cross cueing capability
- Field RDT&E Models of GBSCS-L E&MD Systems to XVIII Airborne Corps
- Conduct consolidated operational readiness, customer, and development test (OCDT) and Limited User Test (LUT) on GBSCS/AQF
- Begin integration of TACJAM-A ECM into GBSCS/AQF
- Build AD/EXJAM models in support of testing and demonstration (4000)
- Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR) (1052)

FY 1996 Planned Program:

- Conduct Milestone III (92)
- Continue TACJAM-A ECM Development (IPR) (241)
- Continue Block I improvements to include (7113):
 - Maintenance/Operator Trainer
 - Database leveling and content analysis capability
 - Interface with TROJAN
 - QUICKFIRE capability
- Incorporate appropriate TST projects, i.e.: Multipath Effects Reduction; Co-channel Interference Reduction
- Conduct Preliminary Design Review and Critical Design Review on Block Upgrades (2216)
- High level software design and Initiate hardware development (4330)

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5 - Engineering And Manufacturing Development	0604270A Electronic Warfare Development	
<ul style="list-style-type: none"> • Conduct OCDT and IOT&E on GBCS/AQF (85) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> • Initiate Block II improvements by (16972) <ul style="list-style-type: none"> - Incorporation of algorithms from TST projects: - Special Mobile Communications; Automated Map Based Intelligence Support System - Digital Data Communications; Code Division Multiple Access (CDMA) Collection - Use results of TST projects with ability to collect against modern HF communications including collection of facsimile signals - Automated processing and display of PROFORMA signals will be incorporated from the "Generic PROFORMA Processing and Display" - Continue improvements to training devices and embedded training capability. 		
<p>Project DL15 - Army Reprogramming and Analysis Team (ARAT): Army Reprogramming and Analysis Team (ARAT) for Target Sensing Systems (TSS): The ARAT project will develop, test and equip an Army wide infrastructure capable of rapid reprogramming electronic combat software embedded in offensive and defensive weapon systems. Systems supported by this project include but are not limited to: radar warning receiver and jammer sub-systems of attack, scout, utility and SEMA aircraft; aircraft survivability equipment; automated intelligence collection systems; and advanced threat sensors for air defense, artillery and missile applications. The project focuses on advanced information management technologies to: automate the threat recognition process; evaluate the operational impact of threat changes on inventoried sensors; develop, test and evaluate software to counter the change; and to develop tactical loading devices for deploying or deployed forces.</p>		
FY 1995 Planned Program: <ul style="list-style-type: none"> • Establish testbed capability to evaluate tactical memory loading devices (600) • Conduct technical training on ARAT and threat databases (200) • Initiate technical evaluation of threat analysis data-bases and database management tools (995) • Complete connectivity of secure Wide Area Network (WAN) with all reprogramming centers/activities, and initiate DISNET connection (1520) • Investigate and develop flagging models for filtering threat emitter information (300) • Develop and maintain threat parameter libraries for regional threat systems (250) • Small Business Innovation Research (SBIR)/Small Business Technology Transfer Program (STTR) (83) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> • Test and evaluate off-the-shelf and developmental memory loading devices for aviation electronic combat (AEC) equipment (985) • Modify or develop as required database management tools for AEC equipment (800) • Initiate study on the feasibility of electronic broadcast reprogramming (400) • Evaluate, procure hardware/software and develop measurement and signature intelligence (MASINT) on-line database access capability (500). • Maintain and improve/upgrade ARAT communications systems (300). 		

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RD&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604270A Electronic Warfare Development		
FY 1997 Planned Program: <ul style="list-style-type: none"> • Modify or develop database management tools for ADA, IEW, Fire Support and Armor TSS (1480). • Test and evaluate off-the-shelf and developmental loading devices for ADA, IEW, Fire Support and Armor TSS (700). • Conduct a demonstration and validation of broadcast reprogramming (800). • Improve or modify ARAT flagging capability (500). • Maintain MASINT database on-line capability (500). <p>Project DL16 - Trojan Development: New start for Project TROJAN in FY 96. This project is Tactical Intelligence and Related Activities (TIARA) program. A key factor in modern warfare is the ability to collect, process, and use information about your adversary while preventing him from obtaining similar information. Project TROJAN is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, facsimile, and electronic reconnaissance support to U.S. forces throughout the world. Project TROJAN operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. This program tests and evaluates new digital intelligence collection, processing and dissemination technology using the fielded TROJAN systems, prior to the acquisition of those technologies. The process that will enable us to win the battlefield information war is referred to as digitization. This capability will allow us to process and disseminate real-time intelligence data from various sources; it forms the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative the TROJAN system keep pace with Digitization initiatives in order to respond aggressively to the emerging intelligence communication threats.</p> <p>FY 1994 Planned Program: Project established FY 96.</p> <p>FY 1995 Planned Program: Project established FY 96.</p> <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Apply proof-of-principle for video compression/processing technologies to the TROJAN intelligence processing workstation (145) • Perform proof-of-principle for specific TROJAN applications for non-standard modulations using digital signal processing technologies (400) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Continue proof-of-principle efforts for specific TROJAN applications for non-standard modulations techniques using digital processing technologies (400) • Proof-of-principle for video compression/processing technologies (353) • Develop specialized software for classified pre-processing (493) • Develop enhanced signal processing algorithms for multiple antennas (87) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604270A Electronic Warfare Development	
<p>Project DLI8 - High Value Asset Defense System: This is the continuation of the SHORTSTOP program which was initiated as a Quick Reaction Program (QRP) to a CENTCOM Statement of Need (SON) developed in the early part of Operation Desert Shield/Desert Storm. The SHORTSTOP Electronic Protection System is a fully integrated Radio Frequency Countermeasure system which is designed to provide protection for personnel and other high value assets against proximity fuzzed munitions. The SHORTSTOP Operational Requirements Document (ORD), approved Apr 94, calls for a system with a lightweight autonomous configuration which shall be quickly and easily deployed via vehicles or manpack. In order to maximize tactical utility, it further requires that the set be capable of operation from either a battery or suitable external power source. There shall be three (3) configurations of the SHORTSTOP Electronic Protection System: a manpack system, a stand alone system, and a vehicle mounted system. SHORTSTOP will be used by Infantry, Engineering, Armored, Field Artillery, and Intelligence units to enhance survivability. Initial Operational Capability (IOC) for the lightweight versions is FY 99.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted a Milestone II (MS II) In-Process Review (IPR) (75) • Completed upgrade of LPU units to a multiband configuration (555) • Continued threat analysis for development of Electronic Counter Measure (ECM) techniques (358) • Awarded a competitive Engineering and Manufacturing Development (EMD) contract for development of a lightweight militarized system (1850) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct testing of LPU units upgraded to a multiband configuration (257) • Continue development of a lightweight militarized system (4554) • Continue threat analysis for development of ECM techniques (75) • Small Business Innovation Research (SBIR)/Small Business Technology Transfer Program (STTR) (105) <p>FY 1996 Planned Program</p> <ul style="list-style-type: none"> • Complete fabrication of nine (9) prototypes (6598) • Conduct Technical Test on nine (9) prototypes (925) • Conduct IPR for approval to procure units for Initial Operational Test and Evaluation (IOTE) (175) <p>FY 1997 Planned Program</p> <ul style="list-style-type: none"> • Award contract modification to procure twenty (20) additional units to support IOTE (75) • Fabricate and deliver twenty (20) units (8603) • Conduct IOTE (1571) <p>Project D611 - Tactical Deception-Army Wide: Upgrade design of the Multispectral Close Combat Decoy (MCCD), prepare for the procurement of the Log Base Critical Node (LBCN) and for interface with Battelab simulations.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
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BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604270A Electronic Warfare Development	
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Completed Log Base Critical Node (LBCN) tech data package (200) Modified and upgraded Multispectral Close Combat Decoy (MCCD) design and heating system (500) Used MCCD IOTE data to create decoy algorithms in Battlilab simulation (150) Initiated and coordinated renovation program of decoys at New Cumberland Army Depot (114) Established Wide Area Network (WAN) secure connectivity between the threat analysis and reprogramming centers and conducted a proof of principle demonstration (300) Implemented tested and provided operating procedures for a rapid reprogramming Bulletin Board System (BBS) (200) Demonstrated the utility of message format standardization for transmitting technical reprogramming data (200) Developed threat parameter libraries for regional threat systems (283) <p>Project D665 - Aircraft Survivability Equipment Development: Provides for the development and system integration of Aircraft Survivability Equipment (ASE) to achieve survivability, reduce vulnerability, and enhance combat effectiveness required to fulfill Special Electronic Mission Aircraft (SEMA), attack/scout, and assault/cargo mission requirements. Equipment developed will increase combat effectiveness and potential for mission accomplishment by reducing or eliminating the ability of threat air defense systems to detect, hit, damage, or destroy Army aircraft. Developments respond to the approved requirements documents, test, and type classification for production and fielding of ASE systems to address infrared, radar, laser, and optical/electro-optical directed air defense threats. Projects in development include new or upgraded systems to counter monopulse, millimeter wave, frequency agile, pulse doppler, and continuous wave radars; passive infrared missile seekers; and laser directed weapon systems. Continual adjustments are made to this program to meet the changing and evolutionary nature of technology and threat. This program has joint service applications that are coordinated through the Joint Technical Coordinating Group for Aircraft Survivability (JTCCG/AS), as well as NATO applications coordinated through OSD. This project also provides the technical base for electronic warfare equipment for Comanche and Special Operations Aircraft</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Completed DEM/VAL of the Advanced Threat Infrared Countermeasure (ATIRCM) (9143) Continued effectiveness evaluations (2751) Continued software support (441) Continued DEM/VAL of Infrared (IR) Expendables (3150) Completed DEM/VAL and initiated Engineering & Manufacturing Development (EMD) of the Advanced Threat Radar Jammer (ATRJ) (11464) Continued EMD of the AN/APR-39A(XE-2) Radar Signal Detecting Set (RSDS) (700) Completed EMD of AN/APR-48A Radar Frequency Interferometer (RFI) (606) Continued integration efforts of ASE systems (492) Continued development of Passive IR features for reduction of aircraft signature in all IR bands relative to heat seeking missiles (3391) Continued in-house program management administration (3843) 		

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BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE	
	0604270A Electronic Warfare Development	
FY 1995 Planned Program: <ul style="list-style-type: none"> Initiate EMD of ATIRCM (7372) Complete DEM/VAL and initiate EMD of the IR Expendables (4350) Continue EMD of the ATRJ (13567) Continue development of Passive IR features for reduction of aircraft signature in all IR bands relative to heat seeking missiles (1586) Continue effectiveness evaluations (683) Continue software support (3) Continue integration efforts of ASE systems (337) Complete EMD of the AN/APR-39A(XE-2) Radar Signal Detecting Set (RSDS) (50) Continue in-house and program management administration (3760) Small Business Innovation Research (SBIR)/Small Business Technology Transfer Program (STTR) (615) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> Continue EMD of ATIRCM (16904) Continue EMD of the IR Expendables (1529) Continue EMD of the ATRJ (16401) Continue development of Passive IR features for reduction of aircraft signature in all IR bands relative to heat seeking missiles (1286) Continue effectiveness evaluations (406) Continue integration efforts of ASE systems (50) Continue software support (100) Continue in-house and program management administration (3241) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> Continue EMD of ATIRCM (17012) Continue EMD of the IR Expendables (3030) Continue EMD of the ATRJ (14489) Continue development of Passive IR features for reduction of aircraft signature in all IR bands relative to heat seeking missiles (1302) Continue effectiveness evaluations (536) Continue integration efforts of ASE systems (50) Continue software support (100) Continue in-house and program management administration (3326) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		
5 - Engineering And Manufacturing Development		February 1995
PE NUMBER AND TITLE 0604270A Electronic Warfare Development		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1995
Appropriated Value	83825	89122
Adjustments to Appropriated Value (Total PE)	83825	91914
a. SBIR/ST TR decrement (-1245)	-765	
b. Reprogramming into PE (490)		
Current Budget Submit/President's Budget	83070	91914
		65222
		72379
		59194

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995	
BUDGET ACTIVITY			PE NUMBER AND TITLE						PROJECT			
5 - Engineering And Manufacturing Development			0604270A Electronic Warfare Development						DL12			
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
L-12 Electronic Warfare Development:	42304	50652	14077	18972	16746	10220	10410	11971	Continuing	Continuing		
C. Other Program Funding Summary												
OPA (SSN BZ7326)	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost		
OPA (SSN BZ9752)	0	58405	46937	46581	45243	47256	47425	59364	Cont'd	Cont'd		
APA (SSN AB3000)	6629	10626	14884	12263	0	0	6704	6755	Cont'd	Cont'd		
RDTE Budget Activity 7	490	38889	38049	37188	39205	42201	51966	66089	Cont'd	Cont'd		
DCP PE 030885G, GBGS	15492	15722	18949	19824	19324	19624	19724	20893	Cont'd	Cont'd		
RDTE Budget Activity 7	6030	5013	3038	2998	4165	5515	6049	6828	Cont'd	Cont'd		
DCP PE 030885G, CHALS-X												
D. Schedule Profile												
Acquisition Milestones	1	2	3	4	1	2	3	4	1	2	3	4
Award Contract for GBGS-L LPU												
Award Upgrade for AQF Engine												
Conduct IPR for LRIP												
Award Contract GBGS/AQF LRIP												
Milestone III on GBGS/AQF												
Engineering Milestones												
Resume/Continue ECM E&MD												
Complete TACJAM-A ECM EM&D												
Conduct Block I Improvements												
Conduct Block II Improvements												
T&E Milestones												
Conduct Block 0 OCDT												
Conduct LUT												
Conduct Block I OCDT on GBGS/AQF												

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PROJECT

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Conduct IOT&E on GBCS/AQF

Contract Milestones

Conduct Special IPR on GBCS-L LPU

Field RDT&E Models GBCS-L

IOC for GBCS-L LPU

✕

X

X

*Denotes completed effort

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February 1995

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604270A Electronic Warfare Development

PROJECT

DL12

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Primary Hardware Development	15655	20536	3716	6004
Software Development	11132	12673	2782	4270
Systems Engineering	1739	2010	438	672
Integrated Logistics Support	3479	4019	875	1343
Quality Assurance	1044	1206	262	403
Reliability, Maintainability & Availability	1739	2009	437	671
Developmental Test & Evaluation	1220	815	815	485
Government Engineering Support	3719	3823	2398	984
Program Management Support	625	645	630	625
Program Management Personnel	1952	1864	1724	1515
SIBR/STTR	0	1052	0	0
Total	42304	50652	14077	16972

B. Budget Acquisition History and Planning Information

Performing Organizations

[illegible]

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT			
5 - Engineering And Manufacturing Development		0604270A Electronic Warfare Development								DL15			
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
DL15 Army Reprogramming and Analysis Team		0	3948	2985	3980	4477	3732	0	0	0	19122		
C. Other Program Funding Summary: There are no other related RDTE efforts.													
D. Schedule Profile:													
Establish a testbed capability to evaluate memory loading devices		FY 1994											
1		2	3	4	1	2	3	4	1	2	3	4	
Initiate technical evaluation of database management tools								X					
Complete connectivity of secure WAN with all reprogramming centers/activities								X					
Test and evaluate off-the-shelf and developmental loading devices for aviation combat equipment													
Modify or develop database management tools for aviation combat equipment													
Initiate study on the feasibility of electronic broadcast reprogramming													
Modify or develop database management tools for air defense and other non-aviation electronic combat systems													
Test and evaluate off-the-shelf and developmental loading devices for non-aviation electronic combat systems													
Conduct a demonstration/validation of broadcast reprogramming													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604270A Electronic Warfare Development

DL15

A. Project Cost Breakdown

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Government Engineering Support		276	275	90
Contract Engineering Support		2252	2000	2400
Development Support Equipment Acquisition		40	0	200
Software Development		510	180	500
Systems Engineering		50	0	100
Training Development		270	70	100
PM Support		300	300	300
PM Management Personnel		167	160	190
SBIR/STTR		83	0	0
Developmental Test and Evaluation		0	0	100
Total		3948	2985	3980

B. Budget Acquisition History and Planning Information**Performing Organizations**

Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	Budget to Complete	Total Program
Product Development Organizations											
ILEX	FFP	1Q95	6162	6162	0	0	1162	1000	1200	2800	6162
CECOM	MIPR	1Q95			0	0	1056	525	690	1500	3771
Various					0	0	1140	1000	1300	2200	5640
Support and Management Organizations											
CECOM					0	0	340	300	500	950	2090
Various					0	0	250	160	190	459	1059
Test and Evaluation Organizations											
TBS		1Q97			0	0	0	0	100	300	400
Government Furnished Property		None.									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604270A Electronic Warfare Development

DL15

Total

**Prior to
FY 1994**

FY 1996

FY 1995FY 1994

FY 1997

Complete

Total	
<u>Program</u>	
15573	
3149	
400	
19122	

Subtotal Product Development

Subtotal Support and Management

Subtotal Test and Evaluation

Total Project

2985

3948

3980

8209

19122

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604270A Electronic Warfare Development								DL16	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL16	TROJAN Development (TIARA)	0	0	545	1333	1410	1484	0	0	0	4772
C. Other Program Funding Summary											
OPA BA0326		FY 1994 11602	FY 1995 22159	FY 1996 19313	FY 1997 3707	FY 1998 4066	FY 1999 4425	FY 2000 4872	FY 2001 5071	To Compl Cont'd	Total Cost Cont'd
D. Schedule Profile											
1	Acquisition Milestones	FY 1994 2	3	4	1	2	3	4	1	2	3
	Contract Awd for Video Compression/Processing										
	Contract Awd for Non-Standard Mod using Digital										
	Contract Awd for Spec Software										
	Contract Awd for Sig Proc Algorithms										
	Engineering Milestones										
	Prototype Insertion										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604270A Electronic Warfare Development		DL16		
A. Project Cost Breakdown						
		FY 1994	FY 1995	FY 1996	FY 1997	
	Hardware Development			326	765	
	Software Development			219	493	
	Prototype Insertion				75	
	Total			545	1333	
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or	Contract					
Government	Method/Type	Award or				
Performing	or Funding	Obligation				
Activity	Vehicle	Date				
Product Development Organizations: N/A						
Support and Management Organizations: N/A						
Test and Evaluation Organizations:						
Misc	C/CPFF	Jan 97	545	545	0	545
	MIPR	Jan 98	1333	1333	1333	4227
Government Furnished Property None.						
Subtotal Product Development						
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project						

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604270A Electronic Warfare Development

DL18

COST (In Thousands)

COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL18	High Value Asset Defense System	2836	4801	7698	10249	0	0	0	0	0	25776

C. Other Program Funding Summary:

Other Procurement, Army Budget Activity 2
SSN: VA8000 SHORTSTOP

D. Schedule Profile

[illegible]

*Denotes completed efforts

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604270A Electronic Warfare Development				DL 18
A. Project Cost Breakdown						
		FY 1994	FY 1995	FY 1996	FY 1997	
Primary Hardware Development		1595	3973	5711	6940	
Development Test and Evaluation		340	257	925		
Operational Test and Evaluation					1571	
Government Engineering Support		599	308	501	907	
Program Management Support		304	348	561	831	
SBIR/STTR			105			
Total		2838	4991	7698	10249	
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or	Contract					
Government	Method/Type					
Performing	or Funding					
Activity	Vehicle					
	Award or					
	Obligation					
	Date					
	Performing					
	Activity					
	EAC					
Product Development Organizations						
Whittaker Elect	C/CPIF	Jul 94	10942			
Whittaker Elect	SS/CPIF	Nov 96				
CECOM	MIPR		599	308	6940	0
Misc	PWD		295	42	907	0
Support and Management Organizations						
SBIR/STTR			105	348		0
Misc	PWD/MIPR		304	561	831	0
Test and Evaluation Organizations						
TECOM	MIPR		138	600	1246	0
	MIPR		202	325	325	
Government Furnished Property: None						
Subtotal Product Development			2194	4281	7847	20534
Subtotal Support and Management			304	453	831	2149
Subtotal Test and Evaluation			340	257	1571	3093
Total Project			2838	4991	10249	25776

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									PROJECT
5 - Engineering And Manufacturing Development		0604270A Electronic Warfare Development									D611
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D611	Tactical Deception-Army Wide	1947	0	0	0	0	0	0	0	0	1947
C. <u>Other Program Funding Summary:</u> None											
D. <u>Schedule Profile</u>											
		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997	
		1 2 3	4 1 2 3	4 1 2 3	4 1 2 3	4 1 2 3	4 1 2 3	4 1 2 3	4 1 2 3	4	
	Complete LBCN tech data package	1 X									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY		PROJECT	
5 - Engineering And Manufacturing Development		D611	
PE NUMBER AND TITLE		0604270A Electronic Warfare Development	
A. Project Cost Breakdown			
Miscellaneous	FY 1994	FY 1995	FY 1996
	25		
Development Test and Evaluation	300		
Operational Test and Evaluation	200		
Contractor Engineering Support	406		
Government Engineering Support	992		
Travel	24		
Total	1947		
B. Program Change Summary: Not applicable			

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604270A Electronic Warfare Development

PROJECT

D665

COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D665	A/C Surv Equip Dev	35061	32323	39917	39845	25711	12021	8218	6710	0	200726

C. Other Program Funding Summary

APA BA 4

AZ3504 ASE

APA Budget Activity 2

AA0720 ASE Modifications

D. Schedule Profile

Continue development of Passive IR

Features

Initiate EMD contract of ATRU

Continue EMD contract of ATRJ

Complete DEM/VAL of ATTRCM

Initiate EMD contract of A TIRCM

Complete DEMVAL of IR Expendables

Continue EMD contract of ATIRCM

Initiate EMD of IR Expendables

*Denotes completed effort

FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
28005	44270	22304	0	25023	68726	60719	60714	Cont'd	Cont'd
2490	8114	4215	5454	4915	3101	2986	9953	Cont'd	Cont'd
FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997	
2	3	1	2	3	2	3	4	2	3
	4	1	2	4	1	4	1	3	4

1	2	3	FY 1994
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development		0604270A Electronic Warfare Development			D665
A. Project Cost Breakdown					
		FY 1994	FY 1995	FY 1996	FY 1997
R&D Contracts		21767	20440	31928	30407
Test and Evaluation		3145	880	684	1499
Contractor Engineering Support		919	2940	995	1290
Government Engineering Support		1455	1898	838	623
Program Management Support/Matrix Support		8695	5550	5472	6026
SBIR/STTR			615		
Total		35981	32323	39917	39845
B. Budget Acquisition History and Planning Information: - Not applicable (does not meet reporting criteria).					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604315A Tri Service Standoff Attack Missile								DF08	
	COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DF08	Tri Service Standoff Attack Missile	38330	19421	0	0	0	0	0	0	0	839074
<p>A. Mission Description and Budget Item Justification: TSSAM was a joint program with the Air Force as the executive service. The program was congressionally directed for the development of a large cruise missile to meet the requirements of all three services. The program objective was to develop a family of affordable, highly survivable, conventional, stealthy cruise missiles which would satisfy tri-service requirements to effectively engage a variety of high-value and sea targets.</p> <p>The FY94 Authorization and Appropriation Congressional Language directed the Army to terminate its participation in the TSSAM program. Based on this direction, and with limited funding, the Army (with OSD concurrence) has begun an orderly termination at minimum expense. The U.S. Air Force Joint Systems Program Office issued a partial Termination for Convenience contract modification to Northrop Aircraft Division on 25 Feb 94 for the Army's portion of the Tri-Service development. The Army issued Termination for Convenience to the integration contractor, Loral Vought Systems Corporation, Dallas, TX and support contractor CAS, Inc., Huntsville, AL. The Army Acquisition Executive approved the Army TSSAM termination plan on 13 May 94. Receipt date of Termination Proposals from both contractors is FY 95 (third quarter). This project supports research efforts in engineering and manufacturing development phases of the acquisition strategy and is therefore correctly placed in Budget Activity 5.</p> <p>FY 1994 Accomplishments</p> <ul style="list-style-type: none"> Funded EMD Activities through Jan 94 (5941) Began Withdrawal/Termination Activities (24191) Supported PEO Tactical Missile Mission (8198) <p>FY 1995 Planned Program</p> <ul style="list-style-type: none"> Negotiate Withdrawal/Termination Contracts (10441) Complete other Withdrawal/Termination Activities (494) Support PEO Tactical Missiles Mission (8100) SBIR/STTR (386) <p>FY 1996 Planned Program: No Planned Program</p> <p>FY 1997 Planned Program: No Planned Program:</p>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	
BUDGET ACTIVITY		PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		0604315A Tri Service Standoff Attack Missile	
B. Program Change Summary			
Previous President's Budget	FY 1994	FY 1995	FY 1996
Appropriated Value	43182	82458	0
Adjustments to Appropriated Value	43182	19421	0
a. SBIR/STTR decrement (-633)	-4852		
b. Reprogrammed out of PE (-4199)			
Current Budget Submit/President's Budget	38330	19421	0
C. Other Program Funding Summary: N/A			
D. Schedule Profile			
Begin Withdrawal/Termination Contracts	FY 1994	FY 1995	FY 1996
Support PEO Tactical Missiles Mission	2 3	4 1 2 3	4 1 2 3
Begin Other Termination Activities	X		
Negotiate/Complete Termination			
Complete Other Termination Activities			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995	PROJECT	
BUDGET ACTIVITY		PE NUMBER AND TITLE								0604315A Tri Service Standoff Attack Missile			DF08
5 - Engineering And Manufacturing Development													
A. Project Cost Breakdown													
Contractor Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997					Budget to	Total		
		24191	10827							Complete	Program		
Program Management Personnel Support		8198	8100										
Test & Evaluation/Other (GFE/OGA's)		5941	494										
Total		38330	19421										
B. Budget Acquisition History and Planning Information													
<u>Performing Organizations</u>													
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997				
<u>Product Development Organizations</u>													
NORTHROP	C/FPIF	APR 86	N/A	N/A	518487	21113	10619					550219	
AIRCRAFT DIV													
LORAL VOUGHT	SS/CPIF	SEP 86	69501	66828	65509	1598						67107	
SYSTEMS													
CAS, INC.	SS/CPFF	DEC 86	N/A	N/A	16341	1210						17551	
MISC													
CONTRACTS	N/A	N/A	N/A	N/A	11662	270	208					12140	
<u>Support and Management Organizations</u>													
IN-HOUSE	PO	OCT	N/A	N/A	46301	7399	7403					61103	
SUPPORT													
MISC. OGA'S	PO	OCT	N/A	N/A	8711	795	701					10207	
<u>Test and Evaluation Organizations</u>													
	PO	OCT	N/A	N/A	39825	4809	494					45128	
	PO	OCT	N/A	N/A	12787	1132						13919	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY			PE NUMBER AND TITLE			DATE		PROJECT	
5 - Engineering And Manufacturing Development			0604315A Tri Service Standoff Attack Missile			February 1995		DF08	
Government Furnished Property									
Contract									
Item	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete
Product Development Property <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
NOF:THROP	SS/CPAF	JUN 91	N/A	61700					
	SS/CPFF								
Support and Management Property: None									
Test and Evaluation Property: None									
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project									
				Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete
				673699	24191	10827			
				55012	8198	8100			
				52612	5941	494			
				781323	38330	19421			
									Total Program
									708717
									71310
									59047
									839074

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604321A All Source Analysis System (TIARA)

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	8417	42049	52698	37428	24942	27363	23781	33422	Continuing	Continuing
DB19 ASAS Evolutionary Acquisition	8417	39064	51205	35438	21559	26865	23781	33422	Continuing	Continuing
D2FT ASAS Operational Test	0	2855	1493	1990	3383	498	0	0	0	0

A. Mission Description and Budget Item Justification: This program element, All Source Analysis System, funds the All Source Analysis System (ASAS) Evolutionary Acquisition (EA) system as well as the operational testing for the ASAS. ASAS is the automated support system for the intelligence and electronic warfare (IEW) functional area of the Army Command and Control System (ACCS). It is a tactically deployable ADP system designed to support management of IEW operations and target development and armored cavalry regiment (ACR), separate brigade, division, corps, and echelons above corps (EAC). The projects in this program element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in budget activity 5.

Project DB19 - ASAS Evolutionary Acquisition: This project funds the development of the Army's only tactical intelligence fusion project, the ASAS Block II Evolutionary Acquisition, within the Intelligence Fusion Project Office. The successful execution of military operations requires a flexible and modular intelligence and targeting system that will provide tactical commanders a common view of the battlefield and a means for gaining a timely and comprehensive understanding of enemy force deployments, capabilities, and potential courses of action. The ASAS is a ground based, mobile, command and control, and intelligence processing system. The ASAS system provides automated support to the combat commander in the areas of intelligence and collection management, all-source target and situation analysis, single and multi-source processing, intelligence reporting, electronic warfare, and operational security as well as automation support to battlefield commander's command and control. The ASAS Block II development program will build upon and expand the capabilities and functionalities developed and produced in the ASAS Block I System including conversion to the Army Command and Control System (ACCS) Common Hardware/Software Open architecture. Additional software capabilities include enhanced intelligence and command and control functionality, jump and degraded mode operations, enhanced communications, and improved reliability and supportability. ASAS Block II strategy maximizes the use of Government Furnished Equipment (GFE), government and commercial Non-Developmental Item (NDI) software, reuse of proven Office of Secretary of Defense (OSD) and ACCS Command, Control, Communications and Intelligence (C3I) software, multiple prototype deliveries and continuous user test and evaluation opportunities. This strategy provides early user capabilities and streamlines acquisition. Building upon experience and feedback gained from the fielded ASAS and other tactical fusion prototypes, ASAS Block II will undergo a Defense Acquisition (DAB) Milestone III review in FY 99. The Army's intent is to keep fielded ASAS technology as current as possible by initiating value engineering/technology insertion to position the ASAS Block I Tactical Operation Center Support Element (TSE) to receive ASAS Block II products, and by packaging some of the ASAS Block II advances into capability packages and inserting them into the fielded ASAS. Twenty-eight ASAS Block II systems will be fielded to Army active and reserve armored cavalry regiments, separate brigades, divisions, corps, and echelons-above corps.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		February 1995
FY 1994 Program Accomplishments:		0604321A All Source Analysis System (TIARA)
<ul style="list-style-type: none">Continued SSP-S Effort (3481)Continued Joint Prototyping (971)Provided ATCCS III Testing Support (3965)		
FY 1995 Planned Program:		
<ul style="list-style-type: none">Continue Block II Engineering & Manufacturing Development (EMD) (32880)Provide GFE to Block II Contractor (1567)Conduct Development/Operational/Assessment Testing (3871)Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (756)		
FY 1996 Planned Program:		
<ul style="list-style-type: none">Continue ASAS Block II Evolutionary E&MD Capability Packages (38990)<ul style="list-style-type: none">-Develop/integrate ASAS Common Applications-Host Collection Management Support Tools-Incorporate ASAS-Single Source (ASAS-SS) Security FeaturesConduct Development/Operational/Assessment Testing (5343)Procure and provide GFE for Product Development & Test (6872)		
FY 1997 Planned Program:		
<ul style="list-style-type: none">Continue ASAS Block II Evolutionary Acquisition E&MD Capability Packages (31866)<ul style="list-style-type: none">-Implement CASS-Compliant System Services and Common Applications-Complete Unified Database Schema-Delivery of CHS VI HCUs for 6 workstations and 1 Communications Support Processor-Develop Operational Diagnostic CapabilityConduct Development/Operational/Assessment Testing (3572)		
<p>Project D2FT - ASAS Operational Test: This project finances the direct costs of planning and conducting operational testing and evaluation of the ASAS by the Operational Test and Evaluation Command (OPTEC). ASAS is an Acquisition Category (ACAT) I system with several dedicated iterations of Initial Operational Test and Evaluation (IOTE) / Operational Assessments (OA) between FY 95 and FY 99. Operational testing/assessment is conducted under conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2FT is restructured from PE 0605712A, Support of Operational Testing, and is not a new start.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PE NUMBER AND TITLE
5 - Engineering And Manufacturing Development		0604321A All Source Analysis System (TIARA)
FY 1995 Planned Program:		
• Plan and prepare for ASAS Block II operational testing (2646)		
• Plan and prepare for ASAS Block II operational testing evaluation (247)		
• SBIR/STTR (62)		
FY 96 Planned Program:		
• Conduct ASAS Block II IOTE/Operational Assessment Testing (593)		
• Conduct ASAS Block II IOTE/Operational Assessment Evaluation (500)		
• Provide Player unit support of IOTE (400)		
FY 97 Planned Program:		
• Conduct ASAS Limited User Test (LUT) testing (1395)		
• Conduct ASAS LUT Evaluation (397)		
• Provide Player unit support of LUT (198)		
B. Program Change Summary		
Previous President's Budget	<u>FY 1994</u>	<u>FY 1995</u>
Appropriated Value	4471	42891
Adjustments to Appropriated Value	4471	42049
a. SBIR/STTR decrement (-19)	3946	
b. HQDA reprogramming (3965)		
Current President's Budget	8417	42049
		52698
		37428
Change Summary Explanation:		
DB19: Funding: FY94 (+3M) funding added for operational testing of ASAS. Funds were realigned to OPA to allow for fielding of ASAS-Extended, FY 96 (-5.5M) and FY 97 (-4.9M). FY 97 (-6M) realigned for higher priorities.		
Schedule: None		
Technical: None		
D2FT: Funding: Additional funding provided in FY 96 (1.5M) and FY 97 (2M) for Operational Testing of ASAS.		
Schedule: None		
Technical: None		

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RD T&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE
	February 1995

DATE _____

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604321A All Source Analysis System (TIARA)

PROJECT

DB19

DB19	ASAS Evolutionary Acquisition	COST (In Thousands)								Total Cost
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	
		6417	36084	51205	35436	21559	26965	23761	33422	Continuing

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To</u>	<u>Total</u>
									<u>Compl</u>	<u>Cost</u>
									<u>Cont</u>	<u>Cont</u>
OPA (K28801) ASAS Modules	33933	23410	9886	7891	9052	34773	64925	74777		
Spares (BA9704/MS9704)	4825	0	100	0	0	0	2089	6266		
Spares (MA9106)		999								

D. Schedule Profile

[illegible]

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			0604321A All Source Analysis System (TIARA)	
5 - Engineering And Manufacturing Development		DB19				
A. Project Cost Breakdown						
Systems Development		FY 1994	FY 1995	FY 1996	FY 1997	
SETA		3846	29798	35162	29044	
Project Management		275	1786	1402	1034	
Matrix Management		331	1126	1326	1003	
Test		0	926	1100	785	
GFE		3965	3871	5343	3572	
Total		0	1587	6872	0	
*SBIR/STTR (756)		8417	*39094	51205	35438	
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete
Product Development Organizations					FY 1994	FY 1995
Martin Marietta (BL ID)(MMC)	CPAF	Oct 93	116679	116679	971	29798
Electronic Warfare Assoc (SSP-S)	CPFF	Sep 94	2555	2555	2555	2555
Sterling SW (SSP-S)	T&M	May 94	320	320	320	320
Support and Management Organizations						
SYTEX	CPFF	Oct 93	TBD	TBD	0	1786
ASAS In-House					0	1126
Matrix CECOM					0	926
Test and Evaluation Organizations						
OPTEC					0	0
MMC					0	3871
					0	5343
					0	0
					0	3572
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE
		February 1995

Exhibit R-3

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995				
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT				
5 - Engineering And Manufacturing Development		0604321A All Source Analysis System (TIARA)								D2FT				
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost			
D2FT	ASAS Operational Test	0	2955	1483	1980	3383	498	0	0	0	0			
C. Other Program Funding Summary: Not Applicable														
D. Schedule Profile														
ASAS Operational Testing/Assessment		1	2	3	4	1	2	3	4	1	2	3	4	X

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604325A Advanced Missile System Heavy								DE18	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE18 Advanced Missile System Heavy		0	0	995	1493	15919	51251	56756	50681	218507	395602
<p>A. Mission Description and Budget Item Justification</p> <p>Provides for Engineering Manufacturing Development for Advance Missile System Heavy, (AMS-H), a vehicle mounted, crew served Heavy Anti-tank Missile System which will replace/supplement the TOW missile family. It will be integrated onto and fired from the High Mobility Multi-purpose Wheeled Vehicle (HMMWV) with Improved Target Acquisition System (ITAS) and on the Bradley Fighting Vehicle (BFV) with Improved Bradley Acquisition Sub-system (IBAS) platforms. The AMS-H will be capable of operating out to the maximum range required in the Heavy Anti-armored Weapon (HAW) Systems Qualitative Materiel Requirements (QMR) and will perform under day/night adverse weather conditions and obscuration. The AMS-H will be countermeasures hardened and will increase crew survivability. The AMS-H will be a competitive EMD program based on performance specifications. Projects within this element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in this budget activity 5.</p> <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • EMD Preparation. (995) <ul style="list-style-type: none"> - Initiate Program Milestone II Documentation - Prepare Request for Proposal for missile and platform integration. - Conduct system and technical analysis <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • EMD Preparation. (1493) <ul style="list-style-type: none"> - Complete development of Program Milestone II Documentation - Conduct Source Selection - Complete Milestone II Review <p>B. Program Change Summary</p> <p>Previous President's Budget Appropriated Value Adjustments to Appropriated Value Current Budget Submit/President's Budget</p>											

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PE NUMBER AND TITLE

0604325A Advanced Missile System Heavy

C. Other Program Funding Summary

D. Schedule Profile

**Release RFP
Complete Source Selection
Milestone II Review**

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604604A Medium Tactical Vehicles									
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		8736	6452		0	0	0	0	1898	Continuing	Continuing
DH07 Family of Medium Tactical Vehicles (FMTV)		6929	6452		0	0	0	0	1898	Continuing	Continuing
DH08 Extended Service Program (ESP)		1761	0		0	0	0	0	0	0	0
DH10 Cab Over Engine - Heavy HMMWV (COHHV)		46	0		0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification
 This program element (PE) supports modernization of the Army's medium truck fleet. The Family of Medium Tactical Vehicles (FMTV) and Extended Service Program (ESP) will replace/remanufacture existing and aging M14 Series 2 1/2 ton trucks, M139 and M809 Series 5 ton trucks which are beyond their average useful life of 20-22 years. FMTV will also provide a follow-on to the current M939/A2 Series 5 ton truck. Body styles currently under development under Project DH07 were deferred from the first 5 year multi-year contract due to budget constraints. Bringing these vehicles on line as soon as possible supports the pure fleet of FMTV to reduce the logistics impact and operating and support costs. Project DH08 is a Congressional interest program which provides upgrade to selected 2 1/2 ton truck assets through the addition of a new engine which meets the EPA emission standards and includes current technology power train components. ESP allows the total Army (Active, Reserve, and National Guard) to enhance its readiness in a time of declining defense spending. Project DH10 is also a Congressionally directed program which funds test and evaluation of the Cab Over Engine Heavy HMMWV (COHHV). The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project DH07 - This project supports the development of the FMTV Special Body Variants (MTV Tanker, MTV Expandable Van, LMTV Trailer and MTV Trailer). The Army is required to fill the 2 1/2 ton (LMTV) and 5 ton truck (MTV) requirements, resolve operational deficiencies and operate throughout the theater as multi-purpose transportation vehicles used by combat, combat support and combat service support units. This system is designed to be rapidly deployable worldwide and operate on primary and secondary roads, trails, and cross-country terrain. Vehicles operate in all climatic conditions.

FY94 Accomplishments

- Continuation of Special Body Variant Prototype contract (4455)
- Developmental Testing (2408)
- Government Engineering Support (66)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE	
	0604604A Medium Tactical Vehicles	
FY 95 Planned Program <ul style="list-style-type: none"> Finalize Special Body Variant Prototype contract and Develop Technical Data Package (2683) Developmental Testing (1414) Government Engineering Support (20) Reprog/Payback PM, TMDE (2200) SIBR/STTR (135) 		
FY 96 Planned Program: Program not funded in FY 96		
FY 97 Planned Program Program not funded in FY 97		
Project DH08 - Medium Truck Extended Service Program (ESP) is a remanufacturing program for the M44A2 series 2 1/2 ton cargo truck in CONUS. ESP provides a vehicle that meets current emission standards and includes numerous safety improvements. ESP vehicles will be equipped with a Central Tire Inflation System (CTIS) for enhanced mobility, automatic transmission and power steering. The new vehicles will have much lower operating and support costs as compared to the current fleet.		
FY94 Accomplishments <ul style="list-style-type: none"> Technical Data Package (TDP) (1268) Parking brake analysis and paper study for armoring of 2 1/2 ton vehicles (115) Government Engineering and Testing of Technology Insertion (378) 		
FY 95 Planned Program: Program not funded in FY 95		
FY 96 Planned Program: Program not funded in FY 96		
FY 97 Planned Program: Program not funded in FY 97		
Project DH10 - The Cab Over Engine Heavy HMMWV (COHHV) was designed and developed by AM General and is a variant of the HMMWV family of vehicles, with the added capability of a 5,000 lb. payload and a three person cab. The COHHV provides roll-on/roll-off capability on a C-130, which coupled with an increase in payload may be utilized in various command and control missions. FY94 funding completes Airdrop and External Air Transport Certification of the COHHV.		
FY94 Accomplishments <ul style="list-style-type: none"> Airdrop and External Air Transport Certification (46) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604604A Medium Tactical Vehicles

FY 95 Planned Program: Program not funded in FY 95

FY 96 Planned Program: Program not funded in FY 96

FY 97 Planned Program: Program not funded in FY 97

B. Program Change Summary

Previous President's Budget

Appropriated Value

Adjustments to Appropriated Value

Reprogrammed into PE (2289)

Current Budget Submit/President's Budget

EX 1994

6548

6447

2289

FY 1995

6541

6452

FY 1996

1821

FY 1997

1785

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RD&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604604A Medium Tactical Vehicles

PROJECT

DH07

COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DH07	Family of Medium Tactical Vehicles (FMV)	6829	6452	0	0	0	0	0	1696	Continuing	Continuing

C. Other Program Funding Summary

**OPAI Family of Medium Tactical Vehicles
(MYP) D1550**

D. Schedule Profile

- Develop Prototypes
- Develop SSP
- Developmental Testing
- Finalize Drawings

[illegible]

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			DH07	
5 - Engineering And Manufacturing Development		0604604A Medium Tactical Vehicles				
A. Project Cost Breakdown						
Product Development		FY 1994	FY 1995	FY 1996	FY 1997	
Developmental Testing		4521	2703			
Reprogramming		2408	1549			
Total		6929	2200	6452		
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete
Product Development Organizations						
Teledyne (Prototype)	C-FFP	Oct 88	13515	13515	13515	13515
Tactical Truck (Prototype)	C-FFP	Oct 88	14500	14500	14500	14500
Stewart Stevenson (Prototype)	C-FFP	Oct 88	17204	17204	17204	17204
Stewart Stevenson (Tech Data Pkg)	C-FFP	Oct 91	10100	10100	10100	10100
Stewart Stevenson (Tech Data Pkg update)	SS-FFP	Jun 92	1916	1916	1916	1916
Stewart Stevenson (Special Bodies Prototype)	SS-CPFF	Sep 92	12750	12750	6819	1476
Stewart Stevenson (Special Bodies TDP)		Jun 95			1207	1207

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY		PE NUMBER AND TITLE			DATE		PROJECT		
5 - Engineering And Manufacturing Development		0604604A Medium Tactical Vehicles			February 1995		DH07		
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
In-House/Eng					1651	66	20		
TACOM, MI									
Govt Eng (all other ftd activities)					1024				
Support and Management Organizations									
N/A									
Test and Management Organizations									
TECOM (APG)					6600	49	1025		
TECOM (YPG)					3000				
TECOM					636	2359	524		
(OPTEC)									
PM, TMDE							2200		
Government Furnished Property: N/A									
Subtotal Product Development					Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
Subtotal Support and Management					66729	4521	2703		
Subtotal Test and Evaluation					10236	2408	3749		
Total Project					76965	6929	6452		
								Budget to Complete	Total Program Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering And Manufacturing Development	0604604A Medium Tactical Vehicles	DH08

[illegible]

OPA I Extended Service Program (DV0009)

Total Cost
17615

D. Schedule Profile

**Award Contract - Tech Data Package
Production Contract Award
Enhanced System Component Testing
Type Classification Standard
First Unit Equipped (FUE)**

FY 1994	2	3	X*
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FY 1995
2 3

FY 2

FY 1996

FY 1997
2 3

10

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development	0604604A Medium Tactical Vehicles			DH08
A. Project Cost Breakdown				
Product Development		FY 1994	FY 1995	FY 1996
Developmental Testing		1383		
Total		378		
1761				
B. Budget Acquisition History and Planning Information: Not Applicable				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT		
5 - Engineering And Manufacturing Development		0604604A Medium Tactical Vehicles								DH10		
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
DH10 Cab Over Engine - Heavy HMMWV (COHHV)		46	0	0	0	0	0	0	0	0	0	

C. Other Program Funding Summary: Not Applicable

D. Schedule Profile: Not Applicable

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604609A Smoke, Obscurant & Target Defeating Systems - ED								D200	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D200 Smoke/Obscurant Systems		17140	3703	2000	0	0	2798	5198	7482	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification:</p> <p>This program element supports the conduct of Engineering and Manufacturing Development (EMD) in smoke and obscurant agents, munitions, and devices to improve survivability of the combined arms force, complement combined weapons systems, and enhance force effectiveness and combat power. Funding supports (1) Motorized Dual Purpose Mechanical Smoke Generator, XM56 mounted on the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) to provide large area visual, infrared (IR) and millimeter wavelength (MMW)-radar obscuration; (2) Generator, Smoke, Mechanical; Mechanized Smoke Obscurant System, XM58, consists of components of the XM56 mounted on a M113A3 carrier. The XM58 will equip smoke units in heavy units resulting in improved vehicle maneuverability and survivability; (3) XM81 MMW/IR Smoke Grenades which support the Vehicle Integrated Defense System. The XM81 provides IR and MMW screening from smart Anti-Tank Guided Missiles (ATGM) and top attack weapons; and (4) also provides funds to close out the XM1101 Mechanized Projected Smoke. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.</p> <p>Project D200 -Smoke/Obscurant: The XM58 Smoke System will provide maneuver commanders the capability of generating large area screens to shield forces from visual and infrared reconnaissance intelligence surveillance and target acquisition threats in support of mechanized forces. The XM56 Motorized Large Area Screening System provides visual and infrared obscuration and increases survivability of light motorized forces by defeating or degrading threat surveillance and weapon system sights operating in the visual through far-infrared regions of the electromagnetic spectrum.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • XM56-Completed Pre-Production Qualification Test (PPQT) and conducted Initial Operational Test and Evaluation (IOT&E) (6616) • XM56-Completed engineering and manufacturing development (EMD) and conducted MSIII and Type Classification (2224) • XM58-Conducted engineering and manufacturing development and initiated PPQT (4900) • XM1101-Closed-out (400) • XM81-Initiated PPQT MMW/IR Grenade (1740) • XM81-Completed System Engineering (1260) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • X'458-Conduct PPQT and Milestone III/Type classification (1754) • XM81-Complete MMW/IR Grenade System Engineering and incorporate changes resulting from PPQT (1771) • XM81-Conduct MSIII TC IPR MMW/IR Grenade (100) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995	PROJECT D200
BUDGET ACTIVITY		PE NUMBER AND TITLE										
5 - Engineering And Manufacturing Development		0604609A Smoke, Obscurant & Target Defeating Systems - ED										
		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	To	Total Cost
M99107, XM58 Smoke Generator		0	0	12698	12050	9704	0	0	0	7464		41916
M99104, M157A1E1 Smoke Generator		0	0	5214	3614	0	0	0	0	0		8828
Modification Kits, M157A1E1 Smoke Generator		0	0	2787	0	0	0	0	0	0		2787
Ammo, A Appropriation												
E82200, XM81 Smoke Grenade		0	0	4000	4000	4000	4000	0	0	0		16000
• Appropriation supports Heavy HMMWV for XM56 SGS (12480)												
D. Schedule Profile:												
XM58-Initiate PPQT	1	2	3	4	1	2	3	4	1	2	3	4
XM58-Conduct PPQT				X*								
XM58-Initiate IOT&E												
XM58-Complete IOT&E												
XM58-Conduct MS III/TC												
XM56-Complete PPQT		X*										
XM56-Conduct IOT&E												
XM56-Conduct MSIII/TC												
XM56-Complete P31 Modularity Design												
XM56-Complete P31 Mod Tech/User Test												
XM56-Conduct P31 Modularity MS III												
XM81-PPQT Hardware Fabrication												
XM81-Initiate PPQT												
XM81-Complete PPQT												
XM81-Milestone III												
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604609A Smoke, Obscurant & Target Defeating Systems - ED				
A. Project Cost Breakdown:				FY 1994	FY 1995	FY 1996
Primary Hardware Development				616		300
Systems Engineering				1902	1281	200
Integrated Logistics Support				1291	111	200
Quality Assurance				382	111	100
Reliability, Maintainability and Availability				195	111	10
Configuration Management				232	117	50
Technical Data				871		100
Test and Evaluation				3045	500	300
Contractor Engineering Support				4673		0
Government Engineering Support				600		200
Program Management Support				637	420	100
Program Management Personnel				868	568	150
Travel				174		50
Miscellaneous				1111	106	240
Hardware				543	300	
SBIR/STTR					78	
Total				17140	3703	2000
B. Budget Acquisition History and Planning Information:						
Performing Organizations						
Contractor or	Method/Type	Award or	Performing	Project	Total	
Government	or Funding	Obligation	Activity	Office	Prior to	
Performing	Vehicle	Date	EAC	EAC	FY 1994	
Activity					FY 1994	
Product Development Organizations						
Chamberlain MRC	C/CPFF	Sep 87	36787	36787	4572	36787
UDLP	MIPR	Mar 94	1342	1342	1342	1342
Misc.	MIPR		54846	54846	6617	54846
ITT Research			2801	2801		2801
MICOM			2022	2022		2022

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY											
5 - Engineering And Manufacturing Development											
PE NUMBER AND TITLE											
0604609A Smoke, Obscurant & Target Defeating Systems - ED											
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
ERDEC (XM81)	PO	Sep 94		15071	10200	3000	1871				15071
Support and Management Organizations											
SoBran, Inc.	SS/CPFF	Oct 93	236	236		236					236
Test and Evaluation Organizations											
Misc.	MIPR		6407	6407	5034	1373					6407
Government Furnished Property: None											
Subtotal Product Development											
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project											
Total					FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
					88313	15531	3625	2000		3400	112869
						236					236
					5034	1373					6407
					93347	17140	3625*	2000		3400	119512

* Does not include SBIR/STTR (78)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604611A JAVELIN (AAWS-M)								D499	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D499	JAVELIN	47205	34288	0	0	0	0	0	0	0	614285

A. Mission Description and Budget Item Justification

This Program Element (PE) provides for the continuation of Engineering and Manufacturing Development (EMD) of a manportable antitank weapon system for the combined arms team employment. The infantry must have the capability to defeat numerically superior armored forces. The present medium infantry antitank weapon is DRAGON. The system developed within this PE will replace the DRAGON to provide enhanced lethality for the early entry force. It will have a high kill rate against all known armor threats at extended ranges under day/night, adverse weather conditions and in the presence of battlefield obscurants. This system will be hardened against countermeasures and will not require extensive training for effective employment. Active protection system developments will be considered and modifications studied to defeat these devices if necessary. EMD/Technical Support will conclude in FY 1995. This project supports research efforts in the engineering and manufacturing development phase of the acquisition strategy and therefore is appropriate to Budget Activity 5.

FY 1994 Accomplishments

- EMD Contract/EPP Contract/FTT Upgrade/Advanced Warhead Major Contracts (32791)
- Complete IO TE/PPQT System Testing (2515)
- In-House Support (10712)
- Support Contract (1187)

FY 1995 Planned Program

- EMD Contract/EPP Contract/FTT Upgrade/Advanced Warhead Major Contracts (22726)
- In-House Support (6967)
- Other Government Agency (3856)
- SBIR/STTR (719)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY		PE NUMBER AND TITLE				DATE	PROJECT		
5 - Engineering And Manufacturing Development		0604611A JAVELIN (AAWS-M)				February 1995	D499		
B. Program Change Summary									
Previous President's Budget		FY 1994	FY 1995	FY 1996	FY 1997				
Appropriated Value		47437	31337						
Adjustments to Appropriated Value		47437	34268						
a. SBIR/STTR decrement (-732)		-232							
b. Reprogrammed to PE (+500)									
Current President's Budget Submit		47205	34268						
C. Other Program Funding Summary									
Missile Procurement, Army		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001
CC0007 JAVELIN		207268	212583	171428	168200	154022	151303	202463	293499
								</	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT
5 Engineering And Manufacturing Development		0604611A JAVELIN (AAWS-M)			
A. Project Cost Breakdown					
Major Contract Support	FY 1994	FY 1995	FY 1996	FY 1997	Total Program
Support Contractor	32791	22726			
Program Management Support	1187				
Research and Development Center Support	4834	3901			
Test Support	3964	3066			
Miscellaneous (OGA)	2515	2768			
SBIR/STTR	1914	1088			
Total	47205	34268			
B. Budget Acquisition History and Planning Information					
Performing Organizations					
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994
Product Development Organizations					
TI/MM JV EMD	C/CPIF	06/21/89	462700	465500	32791
					22726
Support and Management Organizations					
Support Contractor	8(a)/CPFF		N/A	N/A	5560
In-House Support					65073
(Core, Collocated, Labs, OGAs)					1187
					10712
					8055
					6747
					83840
					494932

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)											
BUDGET ACTIVITY		PE NUMBER AND TITLE				DATE	PROJECT				
5 - Engineering And Manufacturing Development		0604611A JAVELIN (AAWS-M)					February 1995 D499				
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations											
RTTC					16203	2227	2703				21133
Other					6571	288	65				6924
Government Furnished Property											
	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property											
Support and Management Property											
Test and Evaluation Property											
Subtotal Product Development											
Subtotal Support and Management											
Subtotal Test and Evaluation											
SBIR/STTR											
Total Project											
					Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
					439415	32791	22726				494932
					70633	11899	8055				90587
					22774	2515	2768				28057
							719				719
					532822	47205	34268				614295

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604619A Landmine Warfare								D088	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D088	Wide Area Mine	23272	33356	31028	18253	18092	19745	22283	22248	25400	313878
<p>A. Mission Description and Budget Item Justification. The Wide Area Mine (WAM) provides unique control and offensive capability for a variety of missions. WAM will significantly reduce blue force warpower losses by using advanced smart technology on the battlefield. This program provides for Engineering Development and Validation of wide area mine system concepts which will enhance the U.S. capability in mine warfare. The program provides for Engineering and Manufacturing Development (EMD) of the Basic WAM deployed by hand emplacement with one way communications. The pre-planned product improvement Basic WAM with 2-way command and control and redeployable capabilities will use advanced sensors, computer technology, and warhead technology to extend the range and lethality of present scatterable mines. The project in this Program Element supports the EMD phase of the acquisition strategy for the Wide Area Mine and is, therefore, appropriately placed in Budget Activity 5.</p> <p>Project D088 - Wide Area Mine</p> <p>FY 1994 Accomplishments</p> <ul style="list-style-type: none"> • Procure qualification hardware and fabricate WAM Hand Emplaced Prototype (16877) • Complete Systems Qualification Test (2500) • Complete System Components Critical Design Review (3895) <p>FY 1995 Planned Program</p> <ul style="list-style-type: none"> • Complete System Critical Design Review (450) • Complete Contractor Prototype Qualification Review (11022) • Procure and fabricate Basic WAM Technical Tests/User Tests (TT/UT) hardware (19963) • Conduct Basic WAM Milestone IIIa (1240) • Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) decrement (681) <p>FY 1996 Planned Program</p> <ul style="list-style-type: none"> • Complete Live Test (2500) • Complete TT/UT Testing (8462) • Complete Functional Configuration Audit (3666) • Complete initial WAM PIP EMD Trade-Off studies (16400) <p>FY 1997 Planned Program</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604619A Landmine Warfare

- Complete WAM PIP Ground Platform Preliminary Design Review (6400)
- Complete WAM PIP Air Sensor Preliminary Design Review (7800)
- Procure Initial Contractor Systems Component Hardware (4053)

B. Program Change Summary

Previous President's Budget

Appropriated Value

Adjustments to Appropriated Value

a. SBIR/STTR decrease (-315)

b. Reprogramming into PE (+2401)

Current Budget Submit/President's Budget

FY 1994
21186
21186
2086

FY 1995
33843

FY 1996
31177

FY 1997
18339

18253

C. Other Program Funding Summary

Appropriation: Procurement of Ammunition, Army

Wide Area Mine, SSN E78100

WAM Individual Trainer, SSN E78103

WAM Collective Trainer, SSN E78104

FY 1994 FY 1995 FY 1996 FY 1997 FY 1998 FY 1999 FY 2000 FY 2001 To Total Cost

15000 20000 20000 35000 35000 35000 35000 105000 265000
1517 850
336 1150

D. Schedule Profile

FY 1994
1 2 3

4
X*

FY 1995
2 3

4 1

FY 1996
2 3

FY 1997
2 3

FY 1998
1 2 3 4

Fabricate HE WAM Prototype

Qualification hardware

Complete Systems Demonstration Test

Complete System Components Critical

Design Reviews

Complete System Critical Design Review

Complete Contractor Prototype

Qualification Tests

Fabricate Basic WAM Technical Test/

User Test (CJT) hardware

Conduct WAM Milestone IIIa

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995					
BUDGET ACTIVITY		PE NUMBER AND TITLE															
5 - Engineering And Manufacturing Development		0604619A Landmine Warfare															
D. Schedule Profile		FY 1994										FY 1995		FY 1996		FY 1997	
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Complete Live Test																	
Complete TT/UT Testing																	
Complete Functional Configuration Audit																	
Complete Basic WAM Milestone III																	
Complete initial WAM PIP Trade-Off studies																	
Complete WAM PIP Ground Platform Preliminary Design Review																	
Complete PIP Air Sensor Preliminary Design Review																	
Procure initial contractor system component test hardware																	
WAM PIP Milestone III - 9/99																	
DOMS Milestone III - 9/02																	
* Denotes completed																	
X																	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)			DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT	
5 - Engineering And Manufacturing Development	0604619A Landmine Warfare		D088	
A. Project Cost Breakdown				
Primary Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997
Test and Evaluation	19446	27096	25261	14861
Gov't Engineering Support	357	584	538	317
Gov't Program Management	2252	3685	3394	1997
GFM	528	864	796	468
MISC	45	74	68	40
Total	644	1053	971	570
	23272	33356	31028	18253
B. Budget Acquisition History and Planning Information:	N/A			

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RT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604633A Air Traffic Control

PROJECT
D586

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D586 Air Traffic Control	1985	7700	1813	1838	1880	1922	2271	2341	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element funds continuously evolving efforts for the development of Air Traffic Control (ATC) systems for both tactical and fixed base applications. It funds the integration and qualification of an Air Traffic Navigation, Integration, and Coordination System (ATNAVICS) and Tactical Airspace Integration System (TAIS). These systems provide urgently needed communications and precision/non-precision approach and flight following capability in support of Army tactical airfields, remote landing zones, drop zones, pickup zones and temporary helicopter operating areas worldwide. These are non-developmental item (NDI) programs. Fixed base ATC efforts funded by this line include Precision Approach Radar (PAR), Navigation Air Systems Modernization (NAVAD), Communication System Modernization and digitization of the ATC structure. The tasks in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore correctly placed in Budget Activity 5.

Project D586 - Air Traffic Control

FY 1994 Accomplishments:

- Air Traffic Navigation, Integration, Coordination, Systems (ATNAVICS)/Precision Approach Radar (PAR)
- Evaluation and suitability study and cost saving data (580)
- Plan developmental test and operational testing (100)

Tactical Airspace Integration System (TAIS)

- Market analysis for state-of-the-art system (483)
- Design definition/integration analysis (802)

FY 1995 Planned Program:

ATNAVICS/PAR

- Procure prototype system for Developmental testing/initial operational test evaluation (IOTE) (6700)
- Initial Operational Test Evaluation (IOTE) (200)
- Design, fabricate, test prototype system (233)
- Plan test under operational conditions (100)
- SBIR/STTR (162)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604633A Air Traffic Control		D586
TAIS <ul style="list-style-type: none"> Design/system integration with Army communication hardware/software digitization integration analysis (88) Hardware/software demonstration (83) Evaluation and suitability study and cost saving data (200) 			
FY 1996 Planned Program: ATNAVICS/PAR <ul style="list-style-type: none"> Fixed base PAR Performance Test (100) ATNAVICS/PAR System Performance (900) 			
TAIS <ul style="list-style-type: none"> System concept design definition (692) Suitability study and cost saving data (121) 			
FY 1997 Planned Program: TAIS <ul style="list-style-type: none"> Procure prototype system for Developmental Testing/Initial Operational Test Evaluation (IOTE) (1100) Design, fabricate, test prototype system (738) 			
B. Program Change Summary			
Previous President's Budget	FY 1994	FY 1995	FY 1996
Appropriated Value	5600	7873	1821
Adjustments to Appropriated Value	5600	7766	
a. Reprogramming (-3548)	-3635		
b. SBIR/STTR (-87)			
Current Budget Submit/President's Budget	1965	7766	1813
			1838

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604633A Air Traffic Control

C. Other Program Funding Summary

APA AA0050 - Air Traffic Control

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
	10761	8708	8187	6449	6172	6269	9954	43794	Cont'd	Cont'd
D. Schedule Profile										
ATNAVICS/PAR Suitability Study										
TAIS Market Survey										
TAIS Design Definition Analysis										
Procure prototype for ATNAVICS/PAR										
ATNAVICS Design and Fabricate										
Evaluation and suitability study for TAIS										
ATNAVICS/PAR System Performance										
PAR On Site Operational Demonstration										
TAIS System Design Definition										
Procure prototype for TAIS										
TAIS Design and Fabricate										
TAIS Developmental Testing										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604633A Air Traffic Control				
A. Project Cost Breakdown						
	FY 1994	FY 1995	FY 1996	FY 1997		
Contractor Engineering Support	997		1021	396		
Primary Hardware Development	165	7111	100	150		
Program Management Support	803	655	692	642		
Development Test and Evaluation				650		
Total	1965	7766	1813	1838		
B. Budget Acquisition History and Planning Information: Not Applicable						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604640A Future Command And Control Vehicle (FC2V)								DG27	
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG27	Future Command and Control Vehicle	10525	31876	18238	6896	6896	0	0	0	0	74270
<p>A. Mission Description and Budget Item Justification</p> <p>The Command and Control Vehicle (C2V) will provide a fully tracked, armored vehicle that will ensure a mobile, responsive and survivable command and control capability for the heavy force. The C2V will be capable of command and control during mobile operations. The C2V supports the Army Digitization effort and will be capable of incorporating communications and electronic systems compatible with Army Tactical Command and Control Systems. This program is a Desert Storm Initiative. Program is currently in Engineering and Manufacturing Development Phase.</p> <p>FY 1994 Accomplishments</p> <ul style="list-style-type: none"> • Continue Design Effort (4900) • Fabrication of Pre-Production Vehicles (3200) • Government test development (200) • Project Management (2225) <p>FY 1995 Planned Program</p> <ul style="list-style-type: none"> • Fabricate Pre Production Vehicles (15900) • Design Logistics Effort (3700) • Continue Design Engineering (6651) • Begin PPQT and Live Fire (2700) • Project Management (2086) • SBBR/STTR (639) <p>FY 1996 Planned Program</p> <ul style="list-style-type: none"> • Develop TDP (4769) • Logistics Effort (2800) • Continue Design Engineering (4462) • Prototype Manufacture (700) • Conduct Live Fire (2700) • Project Management (2807) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995

TYPE NUMBER AND TITLE

0604640A Future Command And Control Vehicle

DG27

- Complete Technical Data Package (800)
- Logistics Effort (1100)
- Complete Prototype (1000)
- Complete Live Fire (2500)
- Award LRP Contract (100)
- Project Management (1366)

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
10654	32159	17515	9122
10654			
-129			
10525	31676	18238	6866

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To <u>Compl</u>	Total Cost Cont.
			30158	35936	70555	89338	129191	Cont.	
				1027	1015			Cont.	
			30158	36963	71570	89338	129191	Cont.	

	FY 1994	FY 1995	FY 1996	FY 1997
1	2	4	1	2
x*	3	3	3	3
			4	4

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

0604640A Future Command And Control Vehicle
(FC2V)PROJECT
DG27

5 - Engineering And Manufacturing Development

FY 1994

FY 1995

FY 1996

FY 1997

1

2

3

4

1

2

3

4

1

2

3

4

1

2

3

4

Award EMD Contract

Complete Design Effort

Complete Facility Vehicle Testing

Start Developmental Testing

Complete Pre-Production Vehicles

Start Live Fire Testing

LRIP IPR

Award LRIP Contracts

Complete Developmental Tests

Complete Live Fire

x*

x

x

x

x

x

x

x

x

x

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

BUDGET ACTIVITY	PE NUMBER AND TITLE	DATE	PROJECT
5 - Engineering And Manufacturing Development	0604640A Future Command And Control Vehicle (FC2V)	February 1995	DG27

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Design Engineering	4900	10351	12031	1900
Prototype Manufacture	3200	15900	700	1000
Test	200	2700	2700	2500
In House Tasks	2225	2725	2807	1466
Total	10525	31676	18238	6866

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
United Defense (LP) San Jose, CA	SS/CPIF		28000	28000			13500	11600	2900		28000
Other Contracts				20200		8100	12751	1131		2000	23982
Support and Management Organizations											
TACOM						1125	1390	1432	1077	35	5059
CECOM						1100	1335	1375	389	30	4229
Test and Evaluation Organizations											
APG, YPG, White Sands						200	2700	2700	2500	4900	13000

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DATE February 1995

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604640A Future Command And Control Vehicle

DG27

Government Furnished Property: None

	<u>Total Prior to FY 1994</u>	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Subtotal Product Development		8100	26251	12731	2900	2000	51982
Subtotal Support and Management		2225	2725	2807	1466	65	9288
Subtotal Test and Evaluation		200	2700	2700	2500	4900	13000
Total Project		10525	31676	18238	6866	6965	74270

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604641A Tactical Unmanned Ground Vehicle
(TUGV)

PROJECT

DE47

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE47 TACTICAL UNMANNED GROUND VEHICLE	0	0	0	2985	2985	2986	2987	2983	0	14946

A. Mission Description and Budget Item Justification This is a Joint Service Program. This robotic system provides battalion Commanders and below with the ability to see and shape the battlefield from a remote location utilizing Reconnaissance, Surveillance and Target Acquisition (RSTA), greatly extending the survivability of combined forces by extending the control radius of human presence on the battlefield. The current Joint Army/Marine Corps Operational Requirements Document (JORD) states a need for "combat-expendable" organic unmanned vehicles capable of providing relevant RSTA, chemical vapor detection, patrolling, and hazard/obstacle detection for the maneuver forces, battalion and below. The project is OSD funded through Milestone II (3rd quarter FY 97), at which point Army and Marine Corps funding begins. This PE supports research efforts in the engineering, manufacturing and design phase of the acquisition cycle and is therefore placed in Budget Activity 5. This is an ACAT III Program.

FY 1994 Accomplishments:

- Prepared Milestone I Documentation
- Scheduled Change to Split Combined Milestone I/II
- Staffed Joint Operational Requirements Document (JORD)

FY 1995 Planned Program:

- Obtain Milestone I Decision
- B Specification Development
- Begin Technical Testing on Demonstration and Validation Test Assets
- Initiate User Appraisals

FY 1996 Planned Program:

- Continue Technical Testing/User Appraisals
- Test/Resolve Critical Issues
- Develop and Release Engineering and Manufacturing Development (EMD) Request for Proposal

FY 1997 Planned Program:

- Obtain Milestone II Decision (1492)
- EMD Contractor Source Selection/Contract Award (1493)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604641A Tactical Unmanned Ground Vehicle (TUGV)	DE47	
B. Program Change Summary			
Previous President's Budget Appropriated Value	FY 1994	FY 1995	FY 1996
Adjustments to Appropriated Value			1492
Current Budget Submit/President's Budget			1493
<p>C. Other Program Funding Summary This program is OSD funded through Milestone II which is scheduled for 3rd quarter FY 97. Service funding, Army and Marine Corps, begins 4th quarter FY 97. Army and Marine Corps Procurement funding will be addressed during the POM 98 submission.</p>			
D. Schedule Profile			
	FY 1994	FY 1995	FY 1996
	1 2 3 4	1 2 3 4	1 2 3 4
USMC Mission Need Statement			
Complete TUGV Baseline Cost Estimate	X*		
Update TUGV Best Technical Approach	X*		
Complete Cost and Oper. Effect. Analysis			
Approved JORD			
Milestone I			
Initiate User Appraisals			
Begin Developmental Test & Evaluation			
Develop EMD Request for Proposal (RFP)			
Release EMD RFP			
Initiate EMD Source Selection			
Milestone II			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

PROJECT

0604641A Tactical Unmanned Ground Vehicle
(TUGV)

DE47

A. Project Cost Breakdown

Government Engineering Support	FY 1994	FY 1995	FY 1996	FY 1997	
Program Management Support				1492	
Total				1493	
				2985	

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
MICOM RDEC											
RSA, AL									1492	C	C
Support and Management Organizations											
UGV/S IPO									1493	C	C
RSA, AL											
Test and Evaluation Organizations											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604642A Light Tactical Wheeled Vehicles								DE41	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE41 Armored Security Vehicle (ASV)		0	0	2167	898	0	0	0	0	0	0
<p>A. Mission Description and Budget Item Justification This PE supports all Light Tactical Wheeled Vehicles such as the High Mobility Multi-purpose Wheeled Vehicle (HMMWV), Commercial Utility Cargo Vehicle (CUCV) and the Armored Security Vehicle (ASV). Currently DE41 (ASV) is the only project in development.</p> <p>Project DE41 - Armored Security Vehicle (ASV). The ASV is a turreted, lightly armored all-wheel drive combat support vehicle which will provide essential protection to selected Military Police units in highly exposed threat environments. The Military Police (MP) currently use the High Mobility Multipurpose Wheeled Vehicle. The ASV is required to provide improved ballistics protection, increased payload and NBC protection to the MP teams. The need for such a wheeled vehicle was highlighted by recent humanitarian missions such as Operation Restore Hope in Somalia and conflict in Bosnia. There is no other comparable system in the inventory which offers the ballistic protection, transportability and mobility of the ASV. This project supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore placed in Budget Activity 5.</p> <p>FY94 Accomplishments: Program not funded in FY 94</p> <p>FY 95 Planned Program</p> <ul style="list-style-type: none"> • Program not funded under this PE • Funded under PE 064328D • Funded by OSD - Initiate Source Selection Evaluation Board (350) • Funded by OSD - Award contract(s) for hardware demonstration vehicles (3111) <p>FY 96 Planned Program</p> <ul style="list-style-type: none"> • Pre-Production Qualification Test (PPQT) (1789) • Government Engineering Support (200) • Technical and Logistics Data (198) <p>FY 97 Planned Program</p> <ul style="list-style-type: none"> • Government Engineering Support (200) • Technical and Logistics Data (696) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995	
BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT			
5 - Engineering And Manufacturing Deve'opment			0604642A Light Tactical Wheeled Vehicles							DE41			
B. Program Change Summary													
Previous President's Budget			FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total	
Appropriated Value			0	3479	910						Compl	Cost	
Adjustments to Appropriated Value			0									37331	
Current Budget Submit/President's Budget			0	0	2187							396	
C. Other Program Funding Summary													
OPA1 Armored Security Vehicle (D02800)			FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total	
OPA4 Initial Spares (PEO Other) (DS1030)						9609	10361	9670	7691		Compl	Cost	
						99	111	101	85			396	
D. Schedule Profile													
Release Draft Specification			FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997		
Release Draft RFP			1	2	3	4	1	2	3	4	1	2	
Release RFP				X*								3	
Source Selection Evaluation												4	
R&D Contract Award													
PPQT Testing													
Release Production RFP													
Production Contract Award													
Milestone III Decision													
								</					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604642A Light Tactical Wheeled Vehicles	DE41	
A. Project Cost Breakdown			
Product Development	FY 1994	FY 1995	FY 1996
Test and Evaluation			198
In-House/Govt Engineering			1789
Total			200
			7187
			696
			200
			896
B. Budget Acquisition History and Planning Information: Not Applicable			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604645A Armored Systems Modernization (ASM)- Engr Dev									
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		89489	62287	38465	20744	14872	8119	333959	518677	Continuing	Continuing
D175 Advanced Field Artillery System Mult Option Fuse		7815	6240	6388	8865	0	4379	0	0	0	41546
D2AT AGS Operational Test		0	2909	0	0	0	0	0	0	0	2909
D2KT Advanced Field Artillery System Operational Test		0	0	0	0	0	3740	1220	100	Continuing	Continuing
D413 Armored Gun System		81874	53118	32077	13779	14872	0	0	0	0	305060
D417 Advanced Field Artillery System - Engineering Development		0	0	0	0	0	0	202841	332217	Continuing	Continuing
D418 Field Artillery Resupply Vehicle - Engineering Development		0	0	0	0	0	0	128898	186360	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Program Element supports the Engineering and Manufacturing Development and Operational Testing efforts for the Armored Gun System, the Advanced Field Artillery System (AFAS), Field Artillery Resupply Vehicle and the Advanced field Artillery System Multi-Option Fuse for Artillery (MOFA). The projects in this program element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project D175 - Advanced Field Artillery System Multi-Option Fuse: The Advanced Field Artillery System (AFAS) is the Army's next generation 155mm self-propelled howitzer system that will provide a significant increase in artillery survivability, lethality, mobility and operational capability and effectiveness through utilization and integration of advanced technology in its subsystems and combat components. This project finances the Engineering and Manufacturing Development phase of MOFA. MOFA will provide proximity, time delay and point detonation functions for 105mm, 155mm and 8 inch bursting projectiles. MOFA will be inductively (or manually) set contributing to AFAS's critical automated ammunition handling capability, allowing AFAS to meet extended range (40-50km), rate of fire (12 rounds/min), and autonomous operations requirements.

FY94 Accomplishments:

- Electronics Manufacturing Development & Fuse Setting Verification (6600)
- Program Management, Management Engineering Services (763)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604645A Armored Systems Modernization (ASM)- Engr Dev	
<ul style="list-style-type: none"> • Full Function System Test, High "G" Survivability Test (252) 		
FY 95 Planned Program: <ul style="list-style-type: none"> • Baseline Design, Producibility Maturation, Electronics Prove-Out (4679) • Program Management, Management Engineering Services (830) • Subsystem testing(600) • SBIR/STTR (131) 		
FY 96 Planned Program: <ul style="list-style-type: none"> • End of Development Review, System Integration Prove-out (4667) • Program Management, Management Engineering Services (608) • Qualification Testing/Developmental and Operational Testing (1113) 		
FY 97 Planned Program: <ul style="list-style-type: none"> • Critical Design Review, Production Readiness Review (4865) • Program Management, Management Engineering Services (600) • Developmental and Operational Testing, Completion Qualification Testing (1500) 		
<p>Project D2AT - AGS Operational Test: The AGS is an Acquisition Category II system with a dedicated Early User Test and Experimentation (EUTE) to support an LRIP decision in FY 95. This project finances the direct costs of planning and conducting operational testing and evaluation of the AGS by the Operational Test and Evaluation Command (OPTEC). Operational testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of the effectiveness and suitability of the system. Project D2AT is not a new start; it represents test funds previously budgeted in PE 0605712, Support of Operational Testing, Project D001, OPTEC Initial Operational Test and Evaluation (IOTE).</p>		
FY 94 Planned Program: Program is unfunded for FY 1994		
FY 95 Planned Program: <ul style="list-style-type: none"> • Early User Test (2909) 		
FY 96 Planned Program: Program is unfunded for FY 1996		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604645A Armored Systems Modernization (ASM)- Engr Dev	
FY 97 Planned Program: Program is unfunded for FY 1997		
<p>Project D413 - AGS: The Armored Gun System (AGS) is a strategically deployable, tactically transportable, lightly armored, highly mobil, direct fire weapon system. The AGS will support light infantry forces in offensive and defensive operations, low and mid intensity conflicts. The AGS will be employed during contingency force operations; therefore it must be capable of insertion via low velocity air drop (LVAD) and execute forced entry operations. Its role is to support infantry units in direct fire mode for point fire target destruction, generally against bunkers, threat medium armor systems, buildings, and in Military Operations in Urban Terrain. System capabilities include C-130 LVAD (Level I Armor), Roll-on/Roll-off C130/C141 (Level II Armor), Roll-on/Roll-off C-17 (Level III Armor), 105mm main gun (XM35) with autoloader, 3 man crew, fire control equivalent to M1 and mobility with Level III armor greater than the M551 Sheridan. The AGS program was restructured in response to Congressional concern regarding concurrency between test and production. The restructured strategy virtually eliminates any overlap between these efforts.</p>		
FY94 Accomplishments: <ul style="list-style-type: none"> • Continued EMD (73171) • Completed BSS Testing (329) • Initiated Vulnerability Testing (350) • Continued Technical Testing (2424) • Project Management (\$'00) 		
FY 95 Planned Program: <ul style="list-style-type: none"> • Continue EMD (41037) • Complete Vulnerability Testing (2000) • Continue Technical Testing (4576) • Project Management (4422) • SBIR/STTR (1083) 		
FY 96 Planned Program: <ul style="list-style-type: none"> • Continue EMD (22316) • Continue Technical Testing (2090) • Begin Live Fire Testing (4800) • Project Management (2871) 		
FY 97 Planned Program: <ul style="list-style-type: none"> • Continue EMD (8405) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604645A Armored Systems Modernization (ASM)-

Engr Dev

- Complete Technical Testing (109)
- Continue Live Fire Testing (200)
- Project Management (1154)
- Begin ESLRF/DTV Development (3911)

B. Program Change Summary

Previous President's Budget

	FY 1994	FY 1995	FY 1996	FY 1997
Appropriated Value	89504	51097	20948	23069
Adjustments to Appropriated Value	89504	62267		
a. SBIR Decrease (-1964)	-15			
b. Reprogram from D330 (+771)				
c. Reprogram from D280 (+1178)				
Current Budget Submit/President's Budget	89489	62267	38465	20744

Change Summary Explanation:**Project D413 - AGS**

Funding: The change in FY 96 funding is due to restructuring of the program as indicated in the schedule comments below. The significant difference is funding for Operational Testing and Live Fire Testing in FY 96 vs. FY 97.

Schedule: LRJP delayed from FY 95 until FY 96. Three year LRJP compressed into one, MS III accelerated from Apr 99 to Mar 97. Production contract award moved up to April 97. IOTE and Live Fire tests accelerated from FY 97 into FY 96.

Technical: None.

Project D175 - MOFA EMD

Funding: Reprogramming from PE 634645/D409 in FY 96 and FY 97 required to maintain continuity between MOFA development and production phases and support AFAS/FARV Development Phases I & II test requirements.

Schedule: One year push-out of MSIII IPR and Type Classification from 2QFY96 to 2QFY97.

Technical: None

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604645A Armored Systems Modernization (ASM)-

D175

Engr Dev

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D175 Advanced Field Artillery System Multi Option Fuse	7615	6240	6388	6965	0	4379	0	0	0	41546
C. Other Program Funding Summary										
RDTE, A Budget Activity 4	FY1994 76466	FY 1995 113129	FY 1996 130459	FY 1997 174342	FY 1998 218991	FY 1999 185407	FY 2000 28977	FY 2001	To Comp	Ttl Cost 1149650
PE 6034645, Project D409 - AFAS						2000	33100	63700	265100	363900
Ammo, A Appropriation										
ER8017 MOFA Production										
D. Schedule Profile										
1 Acquisition Milestones (AM)	FY 1994 2	3	4	1	2	3	4	1	2	3
Milestone III IPR/Type Classification										4
AM - Hardware Delivery										
Engineering Milestones (EM)- Initiated Task III		X*								
T&E Milestones - Ballistic Testing		X*	X*							
EM - Task IV Start										
EM - Complete Task III			X							
T&E Milestones - Start of Development and Operational Test						X				
T&E Milestones - Hardware Prove-out Testing			X							
T&E Milestones - Baseline Design Testing					X					
T&E Milestones - Pre-Qualification Test								X		
EM - Complete Task IV						X				
EM - Start Task V							X			
EM - Contract Completion									X	
T&E Milestones - Completion of Development and Operational Test						X				

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RD&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604645A Armored Systems Modernization (ASM)-
Engr Dev D175

DATE _____

February 1995

PROJECT

D175

A. Project Cost Breakdown						
FY 1994	FY 1995	FY 1996	FY 1997			
Product Development	6600	4679	4667	4865		
Support and Management	763	830	608	600		
Test and Evaluation	252	600	1113	1500		
SIBR/STTR	0	131	0	0		
Total	7615	6240	6388	6965		
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete
Product Development Organizations						
Alliant TechSystems,	CPIF	May 92	18210	19816	5773	
Hopkins, MN Raytheon/TI Joint Ventures,	SS-CPFF			4941	3000	3000
Tuesbury, MA AMCCOM,				596	3002	3002
ARDEC, Dover, NJ & Adelphi, MD				1063	1679	1665
Support and Management Organizations						
AMCCOM,				763	830	608
ARDEC, Dover, NJ & Adelphi, MD						379
Test and Evaluation Organizations						
TECOM, Yuma, AZ				252	600	1113
SIBR/STTR					131	1500
Government Furnished Property: None						
						19716
						1788
						12021
						4164
						3559
						131

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PAGE NUMBER AND TITLE

0604645A Armored Systems Modernization (ASM)-

Engr Dev

	Total	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development		8714	4679	4667	4865	4000	33525
Subtotal Support and Management		984	763	608	600	379	4164
Subtotal Test and Evaluation		94	252	1113	1500		3690
Total Project		9792	7615	6240	6965	4379	41379

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604645A Armored Systems Modernization (ASM)- D2AT									
		Engr Dev									
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2AT	AGS Operational Test	0	2909	0	0	0	0	0	0	0	2909
C. Other Program Funding Summary: None											
D. Schedule Profile											
		FY 1994			FY 1995		FY 1996		FY 1997		
		1 2 3	4	1	2 3	4	2 3	4	1 2	3	4
	Early User Test and Evaluation				X						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604645A Armored Systems Modernization (ASM)- Engr Dev								D2KT	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2KT	Advanced Field Artillery System Operational Test	0	0	0	0	0	3740	1220	100	Continuing	Continuing
C. Other Program Funding Summary RDTE, A Budget Activity 4 PE 0603645, Project D409 AFAS FY 1994 Actual 76466 FY 1995 Estimate 113129 FY 1996 Estimate 130459 FY 1997 Estimate 174342 FY 1998 Estimate 218991 FY 1999 Estimate 185407 FY 2000 Estimate 28977 FY 2001 Estimate 0 Total Cost 1149088											
D. Schedule Profile: Not Applicable											

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

PROJECT

0604645A Armored Systems Modernization (ASM)-

Engr Dev

COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D413 Armored Gun System		81874	53118	32077	13779	14872	0	0	0	0	305080

C. Other Program Funding Summary

WTCVA Appropriation
GZ2755 AGS Training Devices
G82800 Armored Gun System
GA0760 AGS Mods

D. Schedule Profile

**Critical Design Review
Prototype delivery
Complete BSS Testing
EUT&E**

Complete Vulnerability Testing

IPR (LRIP Decision)

Begin IOT & E

Begin Live Fire Test

Complete IOT&E

Complete Live Fire Test

Milestone III (Full Production Decision)

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Total Cost
--	---------	---------	---------	---------	---------	---------	---------	---------	---------------

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Compl	Cost
8218	141551	182222	22786	8459	11640	167211	214030	42885	1233423	134099		
			154638	187733	186038	5076	15600					
			14331	66012	33080							

	FY 1994		FY 1995		FY 1996		FY 1997
2	3	4	1	2	3	4	1
							2
							3
							4

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT					
5 - Engineering And Manufacturing Development		0604645A Armored Systems Modernization (ASM)- Engr Dev				D413					
A. Project Cost Breakdown		FY 1994	FY 1995	FY 1996	FY 1997						
P.otype Design, Manuf. & Support		71568	31819	19719	9655						
XM35 Gun Design, Manuf & Support		2544	3788	1321	231						
Government Testing		3703	7606	7810	417						
Training Devices		1040	4168	125	689						
Program Management		2803	4180	2707	842						
SIBR/STTR			1083								
Other Govt Support		216	474	395	1945						
Total		81874	53118	32077	13779						
B. Budget Acquisition History and Planning Information											
Performing Organizations											
Contractor or Government	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
United Defense LP	SS/CPIF	June 92	213480	213480	84827	71514	31679	19188	6272	0	213480
San Jose, CA											
SAAB Trning Sys	FFP	Sep 94	5000	5000	0	1000	4000	0	0	0	5000
Huskvarna, Swed											
Unknown	TBD	FY 98	N/A	9575	0	0	0	0	0	9575	9575
Misc Govt Agcy	MIPR				4294	2106	4530	2855	803	570	15158
United Defense LP	TBD	FY 97		5638					3911	1727	5638
San Jose, CA											
Red River AD	MIPR	FY 97		4481					1481	3000	4481
Texarkana, TX											
SBIR/STTR	TBD	FY 95					1083			0	1083
Support and Management Organizations											
PM AGS	MIPR				4121	2023	2407	1800	800	0	11151
Warren, MI											
Miscellaneous	MIPR				1345	201	377	112	95	0	2130

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

February 1995

PE NUMBER AND TITLE

0604645A Armored Systems Modernization (ASM)-

Engr Dev

Contractor or Government Performing Activity		Contract Method/Type or Funding Vehicle		Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations													
CSTA APG, MD		MIPR					700	2871	5635	5748	200	0	15154
Misc Govt Agcy		MIPR					386	802	1971	2062	217	0	5438
Government Furnished Property													
Contract													
Item Description	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date				Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property													
XM35 Gun	MIPR	Aug 91	Nov 92				10943	125					11068
Support and Management Property													
XM35 Gun	MIPR						1671	626	744	72			3113
Test and Evaluation Property													
XM35 Gun	MIPR						1053	606	692	240			2591
Subtotal Product Development													
Subtotal Support and Management													
Subtotal Test and Evaluation													
Total Project													
							Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
							100064	74745	41292	22043	12467	14872	265483
							7137	2850	3528	1984	895		16394
							2139	4279	8298	8050	417		23183
							109340	81874	53118	32077	13779	14872	305060

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									PROJECT
5 - Engineering And Manufacturing Development		0604645A Armored Systems Modernization (ASM)- Engr Dev									D417
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D417 Advanced Field Artillery System - Engineering Development	0	0	0	0	0	0	0	202841	332217	Continuing	Continuing
C. Other Program Funding Summary RD/TE, A Budget Activity 4 PE 0603645A, Project D409 AFAS FY 1994 76466 FY 1995 113129 FY 1996 130459 FY 1997 174342 FY 1998 218991 FY 1999 185407 FY 2000 28977 FY 2001 0 Total Cost 1149088 To Compl 0											
D. Schedule Profile: Not Applicable											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE									PROJECT	
5 - Engineering And Manufacturing Development		0604645A Armored Systems Modernization (ASM)- Engr Dev									D418	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D418 Field Artillery Resupply Vehicle - Engineering Development	0	0	0	0	0	0	128898	186360	Continuing	Continuing		
C. Other Program Funding Summary												
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost		
RDTE A, Budget Activity 4	23864	21563	71054	93543	118603	122952	15987	0	0	486811		
PE 0603645A, Project DB88 FARV												
D. Schedule Profile: Not Applicable												

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
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BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604649A Engineer Mobility Equipment Development

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16240	12106	12106	14384	18350	10610	0	0	0	103090
DG25 M1 Breacher	0	0	0	10918	7908	10610	0	0	0	42711
DG26 Heavy Assault Bridge (HAB)	16240	12106	12106	1109	10442	0	0	0	0	60379

A. Mission Description and Budget Item Justification

This Program Element (PE) supports the development of new, advanced combat engineer systems that will have mobility characteristics comparable to the maneuver forces supported. Two projects are included in the PE; both are Operation Desert Storm initiatives. The two projects are the M1 Breacher and the Heavy Assault Bridge (HAB). The base for both vehicles is an M1 Abrams Tank chassis. The M1 Breacher will integrate on the chassis a versatile/survivable full-width mine clearing blade with automatic depth control, a power driven excavating arm, and an armored commander's control station. The HAB will integrate a bridge capable of supporting Military Load Class (MLC) 70 ton loads and a launching mechanism. Both projects in this PE support research efforts in the Engineering and Manufacturing Development (EMD) phase of the life cycle acquisition strategy, and are correctly located in Budget Activity #5.

Project DG25 - M1 Breacher: The M1 Breacher will provide the Combat Engineer with significantly improved mission effectiveness and crew/vehicle survivability while clearing minefields and removing complex natural and man-made obstacles at the forward edge of the battlefield. The M1 Breacher will be capable of moving with, and be as survivable as, the force it is supporting. It will provide the maneuver force with the freedom required to successfully execute assigned ground combat mission requirements.

FY 1996 Planned Program:

- Award Breacher EMD contract (600).
- Provide government management oversight (983).
- Finish design refinement and continue with logistics development efforts (7836).
- Begin Pre-Production Qualification Test (PPQT) (1499).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604649A Engineer Mobility Equipment Development	
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Complete PPQT I/conduct Limited User Test (908). • Begin validation of manufacturing facilities, processes and procedures; prototype repair and modification (10551). • Begin PPQT II (1816). <p>Project DG26 - Heavy Assault Bridge: The HAB will provide Military Load Class (MLC) 70 vehicles the capability to cross 24-meter gaps (26-meter bridge). The HAB will have mobility characteristics comparable to the maneuver forces it will support. The launch time for the bridge will be five minutes or less; the retrieve time will be a total of ten minutes or less which includes five minutes to engage plus five minutes to place the vehicle in a travel mode. The base for the HAB is an M1 Abrams Tank chassis.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Award EMD Phase II contract; conduct System Requirement Review (SRR) and Preliminary Design Review (PDR), buy test hardware and GFE (14043). • Program Management; complete source selection, review SRR and PDR, matrix support (2097). • Systems Engineering Analysis Award (100). <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • EMD Phase II contract; conduct CDR, start/complete integration and prototype build, start contract checkout testing and buy GFE (9258). • Program Management; review CDR, program review, matrix support and prepare Request For Proposal (RFP) for 4 test vehicles (2588). • SBIR/STTR (260) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • EMD Phase II contract; complete contract testing and support Government testing (6327). • Award of Environmental Study (250). • Program Management; conduct LD, start PPQT/EUTE (3894). <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Program Management; complete PPQT/EUTE (384). • Completion of EMD II contract (725). 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604649A Engineer Mobility Equipment Development	February 1995
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1995
Appropriated Value	13304	16865
Adjustments to Appropriated Value	16404	12106
a. SIBR/STTR/Consulting Serv decrement/Other	-164	
b. Reprogrammed into PE	-254	
Current Budget Submit/President's Budget	90	
	16240	12106
		21389
		14384
Change Summary Explanation:		
Project DG25 - M1 Breacher Development		
Funding:	None.	
Schedule:	Schedule slip in Advanced Development has delayed start of EMD into FY 96.	
Technical:	None	
Project DG26 - Heavy Assault Bridge		
Funding:	None.	
Schedule:	None	
Technical:	None	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY:

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604649A Engineer Mobility Equipment

Development

**PROJECT
DG25**

COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG25	M1 Breacher	0	0	10918	13275	7908	10610	0	0	0	42711

C. Other Program Funding Summary

RDTE, A Budget Activity 4

PE 0603649A Project DG24 M1 Breacher AD

PA, WTCV GZ3200 (Breacher MOD)

PA, WTCV GEO175 Breacher (Spares)

D. Schedule Profile

Conduct Critical Design Review (CDR) Begin Development and Early User Testing

Conduct Milestone II Review

Award Engineering and Manufacturing

Development (EMD) Contract

Conduct Low Rate Initial Production

(LRIP) In-Process Review (IPR)

Award LRIP Contract

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To Compl	Total Cost
29070		15726	5615							64794
				74822	93228	96999	120228	130440	Cont'd	Cont'd
					1014	1216	2405	2229	Cont'd	Cont'd

	FY 1994	FY 1995		FY 1996		FY 1997
1						
X*	2	4	1	4	1	2
	3		3		3	3
			2		2	4

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT	
5 - Engineering And Manufacturing Development	0604649A Engineer Mobility Equipment Development				DG25	
A. Project Cost Breakdown						
Development Engineering	FY 1994	FY 1995	FY 1996	FY 1997		
Logistics Support			6127	7734		
System Test & Evaluation			1709	2578		
System Project Management			1499	2724		
Total			1583	239		
			10918	13275		
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior FY 1994	FY 1997 Budget to Complete Total Program
Product Development Organizations						
United Defense	SS-CPIF	Mar 96	NA	26762	0	26762
York, PA					0	
Support and Management Organizations						
TACOM						
Warren, MI						
ANAD						
Anniston, AL						
Other Gov't						
Agencies						
Test and Evaluation Organizations						
TECOM						
APG, MD						
					1499	9689
					271	271
					239	2080
					10312	26762
					9614	26762
					529	2080
					2909	2909
					5466	9689
					2724	9689
					271	271
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					1499	9689

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE
		February 1995

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering And Manufacturing Development	0604649A Engineer Mobility Equipment Development	DG25

0604649A Engineer Mobility Equipment Development

[illegible]

	<u>Total</u>	<u>FY 1994</u>	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Budget to</u>	<u>Total</u>
							<u>Complete</u>	<u>Program</u>
Subtotal Product Development					7836	10312	9614	27762
Subtotal Support and Management					1583	239	3438	5260
Subtotal Test and Evaluation					1499	2724	5466	9689
Total Project					10918	13275	18518	42711

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 1995

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering And Manufacturing Development	0604649A Engineer Mobility Equipment Development	DG26

COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG26	Heavy Assault Bridge (HAB)	16240	12106	10471	1109	10442	0	0	0	0	60379

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To Compl</u>	<u>Total Cost</u>
PA, WTCV GZ3250 (HAB MOD)			15095	47018	42071	63913	83935	117685	Cont'd	Cont'd
PA, WTCV GE0177 HAB (Spare)					1014	1021	1655	1757	Cont'd	Cont'd

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
Contract Selection IPR	1	4	4	4
EMD Contract Award	2	2	2	2
Begin PPQT/EUTE testing	X*	3	3	3
Award of 3 LRIP-Test Vehicles	X*		X	
End PPQT/EUTE Testing			X	
LRIP Contract Award				X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604649A Engineer Mobility Equipment Development	February 1995	DG26
A. Project Cost Breakdown			
Development Engineering	FY 1994	FY 1995	FY 1996
Logistics Support	13168	8616	6134
System Test & Evaluation	975	642	443
System Project Management	2097	2588	1542
SIBR/STTR		260	2352
Total	16240	12106	10471
			1109

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 - Engineering And Manufacturing Development										DG26	
PE NUMBER AND TITLE										0604649A Engineer Mobility Equipment Development	
B. Budget Acquisition History and Planning Information											
Performing Organizations											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Gen Dyn Land Sys	C-CPAF	Jan 94	NA	32103	0	13932	9166	6577	725		30400
Sterling Hgts, MI											
Gen Dyn Land Sys	SS-CPFF	Jan 98	NA	NA						4622	4622
Sterling Hgts, MI											
SMS Corp	SS-FFP	May 92	NA	NA	5798						5798
St. Louis, MO											
Other Contracts	Various	NA	NA	NA	432	100					532
Support and Management Organizations											
ANAD					2190	1404	2061	2107			7762
Anniston, AL					360	21	30			1542	1953
Other Gov't Agencies					586	593	210	245			1634
Other							260				260
Test and Evaluation Organizations											
TECOM					488	80	82	1492	384	4278	6804
APG, MD											
WSMR							205				205
White Sands, NM											

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BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604649A Engineer Mobility Equipment Development

**PROJECT
DG26**

Government Furnished Property										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property										
Various Gov't Sources	MIPR	Various	Various	157	110	92				359
Support and Management Property										
Test and Evaluation Property										
To Be Determined	MIPR	Apr 96	Jun 96				50			50
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project										
				Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
				6387	14142	9258	6577	725	4622	41711
				3136	2018	2561	2352		1542	11609
				488	80	287	1542	384	4278	7059
				10011	16240	12106	10471	1109	10442	60379

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604710A Night Vision Systems Engr Dev

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	41328	42803	39887	39295	22852	21487	18746	30364	Continuing	Continuing
DL69 Horizontal Technology Integration Second Generation FLIR (HTI SGF)	13979	24924	28387	23408	4024	0	0	0	0	95720
DL70 Night Vision Devices Engineering Development	27349	17879	10310	12804	11665	18844	18746	30364	Continuing	Continuing
DL74 Long Range Advanced Scout Surveillance System (LRAS3)	0	0	0	2985	7263	4643	0	0	0	14891

A. Mission Description and Budget Item Justification This program element provides night vision technologies required for US defense forces to engage enemy forces twenty four hours a day under conditions with degraded visibility due to darkness, adverse weather and battlefield obscuration. Developments and improvements to high performance night vision electro-optics, laser and thermal systems and systems integration of related multi sensor suites will enable near to long range target identification, acquisition and engagement as well as improve battlefield command and control in "around the clock" combat operations. Project DL69 is focused on inserting key thermal sensor technology into common battle groups. Project DL70 focuses on a variety of night vision electro-optical equipment for use by individual soldiers. Project DL74 focuses on a long range multi sensor system utilizing Horizontal Technology Integration Second Generation FLIR (HTI SGF) thermal sensors and other technologies, for use by US Army scouts. These projects in PE 0604710A support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project DL69 - Horizontal Technology Integration Second Generation FLIR (HTI SGF) will enable the Army to insert key thermal sensor technology into the highest priority forces (the M8 Armored Gun System, the M2A3 Bradley Fighting Vehicle System and the M1 Abrams). The HTI SGF will allow all vehicles in a common battle group to see the same thermal image. The HTI SGF development is in two parts, an "A" kit, which is specific to the vehicle, and includes integration and installation, and a "B" kit, which includes the common Forward Looking Infrared (FLIR) sensor and display. Funds in this project will develop the "B" kit.

FY 1994 Accomplishments:

- Prepared and conducted Source Selection for HTI SGF (2738)
- Milestone I/II ASARC (250)
- Awarded Producibility Contracts for key components and critical technologies (1973)
- Awarded E&MD contract for platform integration efforts (953)
- Awarded E&MD contracts for FLIR systems (8065)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604710A Night Vision Systems Engr Dev	
FY 1995 Planned Program:		
<ul style="list-style-type: none"> • Develop and Fabricate E&MD B kit prototypes and pilot line for HTI SGF (23201) • Develop and test prototypes from producibility contracts (950) • Initiate integration of prototype from producibility contracts into "B" kits (250) • Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Program (523) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> • Continue development, fabrication of B kit, integration kits and pilot line (25710) • Complete integration of prototypes from producibility contracts (1700) • Begin technical testing of E&MD prototypes for HTI SGF (810) • Qualification testing of E&MD B kit prototypes (1167) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> • Complete development and fabrication of "B" kit (22870) • Complete technical and user tests (286) • LRIP Decision for BFVA3 (250) 		
<p>Project DL70 - Night Vision Devices Engineering Development: This project develops and improves high performance night vision electro-optics, thermal and laser systems, and systems integration of related multi sensor suites to enable near to long range target acquisition and engagement as well as improve battlefield command and control in "around the clock" combat operations. Near term systems in development are: Thermal Weapon Sight, (TWS) - a forward looking infrared (FLIR) used for surveillance and fire control with individual and crew served weapons. Laser Countermeasure System (LCMS) - a laser device for individual soldiers to stand off armored and aircraft optics. Compass/Vertical Angle Measure (C/VAM) for the Mini Eyesafe Laser Infrared Observation Set (MELIOS) - a system enhancement for scouts to accurately gather elevation and azimuth data in addition to MELIOS range data. Driver's Vision Enhancer (DVE) - a thermal imaging device used for driving Combat, Combat Service, and Combat Service Support vehicles and allows drivers to see obstacles through fog and battlefield obscuration. Lightweight Laser Designator/Rangefinder (LLDR) - a day/night manportable laser designator/rangefinder capable of designating vehicle targets out to 5km and ranging targets out to 9995 meters and will process target location data for export through a digital interface. Objective Laser Countermeasure System (OLCMS) - a laser device that meets user's long range requirements for lighter weight, longer range and multi-spectral countermeasure capability.</p>		
FY 1994 Accomplishments:		
<ul style="list-style-type: none"> • Started and completed testing of TWS (6982) • Started testing of LCMS (7274) • Developed E&MD prototypes for DVE (11608) • Completed C/VAM testing (100) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development		0604710A Night Vision Systems Engr Dev
<ul style="list-style-type: none"> • Provided support to Land Warrior program (1385) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> • Complete testing of LCMS (2310) • Fabricate E&MD prototypes for DVE; begin and complete testing (8924) • Fund in-house E&MD effort for LLD/R (1556) • Develop P31 Laser Rangefinder (LRF) for TWS (3364) • Provide support to Land Warrior program (1362) • SBIR/STTR (363) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> • Develop E&MD prototypes for Objective LCMS (7389) • Fabricate E&MD prototype for TWS P31 LRF for TWS (2424) • Provide support to Land Warrior program (497) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> • Complete development and fabricate E&MD prototypes for Objective LCMS (9144) • Begin and complete testing of TWS P31 LRF (3318) • Provide support to Land Warrior program (442) 		
<p>Project DL74 - Long Range Advanced Scout Surveillance System (LRAS3): This project is a new start. It will develop the Long Range Advanced Scout Surveillance System (LRAS3), which is a long range multi sensor system for US Army scouts which will provide the capability to detect, recognize, identify, range and designate potential targets. Currently, US Army scouts do not have the necessary equipment to perform these functions "around the clock". LRAS3 will utilize the HTI SGF thermal sensor and will enable scouts to function "around the clock" in adverse weather and through battlefield obscuration.</p>		
FY 1994 Accomplishment: Not Applicable		
FY 1995 Planned Program: Not Applicable		
FY 1996 Planned Program: Not Applicable		
FY 1997 Planned Program: <ul style="list-style-type: none"> • Milestone I/II IPR (100) 		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604710A Night Vision Systems Engr Dev		
<ul style="list-style-type: none"> Conduct Source Selection Evaluation Board for LRAS3 (335) Award E&MD contract for LRAS3 (2550) 			
B. Program Change Summary			
Previous President's Budget	FY 1994	FY 1995	FY 1996
Appropriated Value	41361	43379	39951
Adjustments to Appropriated Value	41361	42803	
a. SIBR/STTR (-633)	-33		
b. Reprogrammed into DL70 (600)			
Current Budget Submit/President's Budget	41328	42803	39697
39295			
Change Summary Explanation:			
Project DL69 - Horizontal Technology Initiative Second Generation FLIR (HTI SGF)			
Funding: FY 1994 SBIR/STTR -220			
Schedule: None			
Technical: None			
Project DL70 - Night Vision Devices Engineering Development			
Funding: Increased FY 1994 by 600, FY 1994 SBIR/STTR -413			
Schedule: Delay start of Objective Laser Countermeasure System (OLCMS) by one year.			
Technical: None			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)

DATE February, 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

0604710A Night Vision Systems Engr Dev

PROJECT

5 - Engineering And Manufacturing Development

DL69

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL69 Horizontal Technology Integration Second Generation FLIR (HTI SGF)	13979	24924	29387	23408	4024	0	0	0	0	95720

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
6.7 RDTE 0203735A, A Kit (related activity)	0	47393	37613	47879	4407					137292
WTCV G80717 M2A3 Bradley A and B Kit	0	0	0	20587	22219	29438	44608	31724	723228	871804
WTCV GA0700 M1 Abrams A and B Kit	0	0	0	0	0	0	5175	38677	0	43852
WTCV GA0750 Abrams Upgrade A and B Kit	0	0	0	5705	62386	61497	58528	57240	1533431	1778787
WTCV GA0760 M8 AGS A and B Kit	0	0	0	0	12142	56857	27608	0	0	96607

The 0203735A program element funds the "A" kit portion of the HTI SGF development, and is broken out to three distinct projects: the M2A3 Bradley Fighting Vehicle System, the M1 Abrams Tank, and the M8 Armored Gun System. WTCV funds the production tails for A and B kit production for all three platforms.

D. Schedule Profile

	FY 1994			FY 1995		FY 1996		FY 1997			
1	2	3	4	1	2	3	4	1	2	3	4
Milestone I/II ASARC			X*								
B Kit E&MD Award			X*								
Preliminary Design Review (PDR)				X*							
Critical Design Review (CDR)					X						
Initiate Technical Testing											
Initiate Operational Testing						X			X		
Special In-Process Review (SIPR)										X	
Low Rate Initial Production M2A3											X

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

February, 1995

PE NUMBER AND TITLE

0604710A Night Vision Systems Engr Dev

DL69

Primary Hardware Development
Contractor Engineering Support
Government Engineering Support
Project Management Support
Systems Engineering and Productivity
SBIR/STTR
Total

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
7856	20268	25687	21406
250			
2496	2819	1543	1539
451	364	457	461
2726	950	1700	
	523		
13979	24924	29387	23406

Performing Organizations	Contractor or Government	Performing Activity	Contract Method or Funding Vehicle
1. NSA/CSS			
2. NSA/CSS			
3. NSA/CSS			
4. NSA/CSS			
5. NSA/CSS			
6. NSA/CSS			
7. NSA/CSS			
8. NSA/CSS			
9. NSA/CSS			
10. NSA/CSS			
11. NSA/CSS			
12. NSA/CSS			
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93. NSA/CSS			
94. NSA/CSS			
95. NSA/CSS			
96. NSA/CSS			
97. NSA/CSS			
98. NSA/CSS			
99. NSA/CSS			
100. NSA/CSS			

Project	Total
Office	Prior to
EAC	FY 1994

Performing Activity	EAC
---------------------	-----

[illegible]Method/Type
or Funding
Vehicle

**Government
Performing
Activity**

Product Development Organizations

Productivity

March 1994

Texas Instruments, C/CPAF

7 July 1994

**Texas Instruments, C/CPAF
McKinney, TX**

Support and Management Organizations

Project Mgmt

ASARC Support

CECOM NVESD

SBIR/STTR

Test and Evaluation Organizations

* All DT and OT are funded by PEO ASM in the platform funding line. All tests are at the vehicle level.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

February, 1995

PE NUMBER AND TITLE

0604710A Night Vision Systems Engr Dev

6970

	<u>Total Prior to FY 1994</u>	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Subtotal Product Development		10782	21218	27387	21406	2524	83317
Subtotal Support and Management		3197	3706	2000	2000	1500	12403
Subtotal Test and Evaluation							
Total Project		13979	24924	29387	23406	4024	95720

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February, 1995
BUDGET ACTIVITY			PE NUMBER AND TITLE						PROJECT		
5 - Engineering And Manufacturing Development			0604710A Night Vision Systems Engr Dev						DL70		
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
DL70 Night Vision Devices Engineering Development	27349	17879	10310	12904	11665	16844	18746	30364	Continuing	Continuing	
C. Other Program Funding Summary											
Night Vision Devices KA3500 OPA2	FY 1994 87926	FY 1995 80034	FY 1996 77132	FY 1997 81750	FY 1998 52887	FY 1999 12799	FY 2000 96408	FY 2001 121303	To Compl Continue	Total Cost Continue	
D. Schedule Profile											
Initiated TWS technical test	1										
Initiated TWS limited user test (LUT)	2										
TWS Low Rate Initial Production decision	3										
TWS Low Rate Initial Production award	X*										
Initiate TWS user test (IOTE)		X*									
TWS Milestone III Production decision											
TWS Production award											
Initiated LCMS technical test											
Initiated LCMS user test											
LCMS Milestone III Pdn decision											
LCMS Production Award											
Special IPR C/VAM for MELIOS											
Initiate DVE technical test											
Initiate DVE user test											
DVE Low Rate Initial Production decision for BFVS version											
DVE Low Rate Initial Production award (BFVS version)											
Objective LCMS Milestone II Decision											
Objective LCMS E&MD Award											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development		0604710A Night Vision Systems Engr Dev			DL70
A. Project Cost Breakdown					
Primary Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997	
Contractor Engineering Support	18350	11803	5129	7748	
Government Engineering Support	1341	1352	1331	1319	
Project Management Support	3726	2223	2218	2172	
Testing	1163	1168	1152	1075	
SBIR/STTR	2769	970	480	590	
Total	27349	17879	10310	12904	
B. Budget Acquisition History and Planning Information					
Performing Organizations					
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994
					FY 1994
					FY 1995
					FY 1996
					FY 1997
					Budget to Complete
					Total Program
Product Development Organizations					
Hughes Aircraft Co., El Segundo, CA	C/CPIF	Dec 90	42490	42490	0
Lockheed-Sanders, Nashua, NH	C/CPIF	Feb 92	18769	18769	0
Magnavox, Mahwah, NJ	C/CPIF	Aug 93	7571	7571	0
Texas Instruments, McKinney, TX	C/CPIF	Aug 93	10774	10774	0
TBS (OLCMS)	C/CPIF	3Q96			
TBS (LLDR)	MIPR				
			0	7748	Continue
			0	0	1556

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)											
BUDGET ACTIVITY			PE NUMBER AND TITLE			DATE		PROJECT			
5 - Engineering And Manufacturing Development			0604710A Night Vision Systems Engr Dev			February, 1995		DL70			
Contractor or Government	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Support and Management Organizations											
Project Mgmt						1163	1168	1152	1075	Continue	Continue
CECOM NVESD	MIPR					3726	2223	2218	2172	Continue	Continue
Other Support	MIPR					1341	1352	1331	1319	Continue	Continue
SBIR/STTR							363				363
Test and Evaluation Organizations											
OPTEC						2769	970	480	590	Continue	Continue
Government Furnished Property											
Contract											
Item Description	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property											
None											
Support and Management Property											
None											
Test and Evaluation Property											
None											
Subtotal Product Development											
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project											
Total											
Total Prior to FY 1994					51007	18350	11803	5129	7748	FY 1997	Total Program
						6230	5106	4701	4566	Continue	Continue
						2769	970	480	590	Continue	Continue
					51007	27349	17879	10310	12904	Continue	Continue

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February, 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604710A Night Vision Systems Engr Dev								DL74	
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL74	Long Range Advanced Scout Surveillance System (LRAS3)	0	0	0	2985	7283	4843	0	0	0	14891
C. Other Program Funding Summary											
0603774A D131 Budget Activity 4		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total Cost
LRAS-3 K38300 OPA2		4694	2678	2960	2919	3247	3215	3682	3676	Compl	Continue
		0	0	0	0	0	19312	37761	49450	40791	147314
D. Schedule Profile											
Milestone I/II IPR		FY 1994			FY 1995		FY 1996		FY 1997		
E&MD Contract Award		1	2	3	4	1	2	3	4	2	3
										X	X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February, 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT		
5 - Engineering And Manufacturing Development		0604710A Night Vision Systems Engr Dev			DL74		
A. Project Cost Breakdown							
Project Management		FY 1994	FY 1995	FY 1996	FY 1997		
Source Selection					100		
Hardware Development					335		
Total					2550		
					2985		
B. Budget Acquisition History and Planning Information							
Performing Organizations							
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995
						FY 1996	FY 1997
						Budget to Complete	Total Program
Product Development Organizations							
TBS	C/CPIF	3Q97			0	0	2550
						9167	11717
Support and Management Organizations							
Project Mgmt					0	0	335
CECOM NVESD	MIPR				0	0	100
						664	1425
						1525	
Test and Evaluation Organizations							
OPTEC	MIPR				0	0	0
						650	650

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February, 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE					PROJECT	
	0604710A Night Vision Systems Engr Dev					DL74	
Government Furnished Property							
	<u>Contract</u>						
	<u>Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>				
<u>Item Description</u>				<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	
				<u>Prior to FY 1994</u>		<u>Budget to Complete</u>	
						<u>Total Program</u>	
Product Development Property							
None							
Support and Management Property							
None							
Test and Evaluation Property							
None							
Subtotal Product Development				<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	
Subtotal Support and Management							
Subtotal Test and Evaluation							
Total Project							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE
BUDGET ACTIVITY										February 1995
PE NUMBER AND TITLE										
0604713A Combat Feeding, Clothing and Equipment										
5 - Engineering And Manufacturing Development										
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	27008	24719	17959	67971	52561	42743	39032	48670	Continuing	Continuing
DC40 Unit/Organizational Equipment	4065	1422	4220	848	1988	2022	1598	1469	Continuing	Continuing
DL40 Clothing and Equipment	5507	6050	2205	3726	4091	4860	4052	5071	Continuing	Continuing
D548 Military Subsistence System	1268	864	844	837	968	1440	1848	1996	Continuing	Continuing
D687 Enhanced Land Warrior	0	496	0	52239	34761	23610	18128	25496	Continuing	Continuing
D688 Soldier Enhance Program	16170	15887	10680	10321	10752	10811	13407	14638	Continuing	Continuing

A. Mission Description and Budget Item Justification: Supports Engineering and Manufacturing Development (EMD) and Non-Developmental Item (NDI) evaluation of unit/organizational equipment, weapons/munitions, clothing and individual equipment, fabric shelters, field service equipment, food and food service equipment to enhance soldier efficiency, effectiveness, lethality, sustainability and survivability. New food items and food service equipment will be developed to reduce food service logistics requirements for all four Services. The organizational equipment program supports development of a new generation of field device support items: small, large and collective protective shelters; decontamination items; and improved space heaters to shelter and sustain the soldiers in the field and improve quality of life. The Land Warrior program will produce the first fully integrated fighting system for combat soldiers. The projects in this Program Element support research efforts in the engineering manufacturing development and NDI phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project DC40 - Unit/Organizational Equipment: Develop and field soft shelters, showers, latrines and heaters to improve unit sustainability and combat effectiveness. The Force Provider package of tents, laundries, showers, and latrines support improved soldier quality of life as well as humanitarian aid and disaster relief. Improved maintenance tents will ensure continuous operation and combat readiness of helicopters and vehicles. The Family of Space Heaters fuel efficiently replaces dangerous tent heaters.

FY 1994 Accomplishments:

- Initiated EMD of the 35k BTU Space Heater Convective (SHC). (370)
- Conducted Force Provider Operational Test (OT), refurbished test unit and fielded the first module (supports 550 soldiers). (1000)
- Type classified the Force Provider System. (500)
- Awarded Contracts for Force Provider pre-planned product improvements for latrine, laundry and winter operation. (1000)
- Fabricated and tested air beam concepts and down selected to best technology for the Transportable Helicopter Enclosure. (THE). (650)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment	
<ul style="list-style-type: none"> Completed next generation design for the Modular General Purpose Tent System (MGPTS) and the Tactical Air Shelter (TAS). (345) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> Complete redesign of the MGPTS and conduct combined Preproduction Qualification Test/Operational Test (PPQT/OT). (602) Complete comparison testing of the Frame and Airbeam versions of the Transportable Helicopter Enclosure. (216) Complete Pre-Production Qualification Test (PPQT) of the Space Heater Convective (SHC) and initiate EMD of the Space Heater Small (SHS) and the Space Heater Arctic (SHA). (575) SBIR/STTR Adjustment (29) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> Complete testing and Type Classify Force Provider pre-planned product improvements (P.I.D). (2000) Complete PPQT of the SHS and SHA and Type Classify the SHC. (650) Complete Technical Test/Operational Test (TT/OT) and Type Classify the Containerized Self Service Laundry. (471) Complete development and Type Classify the MGPTS. (200) Complete development and Type Classify the Transportable Helicopter Enclosure (THE). (379) Complete development and Type Classify the Lightweight Maintenance Enclosure. (329) Initiate testing of the Ballistic Protective System. (191) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> Complete development and Type Classify the SHS and SHA. (288) Complete TT/OT of the Laundry and Dry Cleaning System. (560) 		
Project DL40 - Clothing and Equipment: Develop state-of-the-art individual clothing and equipment to improve the effectiveness, sustainability and quality of life of the individual soldier. Funding shown in FY 1996-FY 1998 reflects transfer of funds from DL40 to OSD PE 0604384BP to support the Chemical/Biological Defense program in accordance with Public Law 103-60 Title XVII.		
FY 1994 Accomplishments: <ul style="list-style-type: none"> Defined specifics of requirements (based upon trade-off analyses of performance, producibility and costs) and developed Program Management Plans and Test Plans: Sun, Wind and Dust Goggle, Advanced Combat Vehicular Crewman Helmet, Body Armor Set Individual Countermeasure Preplanned Product Improvement (P31), Modular Load Bearing Equipment, and Firefighters Suit - Combat. (593) Conducted market survey, developed initial design concepts, conducted technical and early user evaluations and downselected designs/materials/equipment in design review: Joint Service Lightweight Suit Technology (JSLIST) I Ensemble (chemical protective suits, boots and gloves), Improved Toxicological Agent Protective Suit, 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and Equipment	
<p>Personal Ice Cooling System, and Desert Camouflage Fabric Improvement. In addition, conducted early prototype development, design review and evaluations of Women's dress uniform components (shirts, overblouse, slacks, skirts, necktab and belt). (4289)</p> <ul style="list-style-type: none"> Completed Development Test/Operational Test (DT/OT) assessment reports and type classified: Intermediate Cold Wet Glove P3I, Aircrew Clothing System Cold Weather, Body Armor Set, Individual Countermine (limited procurement, urgent), Women's Oxford Shoe. (525) Provided support for Somalia action. (100) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Joint Service Lightweight Integrated Suit (JSLIST) II Ensemble, Improved Toxicological Agent Protective (TAP) Suit, Personal Ice Cooling System, Interim Firefighters Suit - Combat, Improved Sun, Wind and Dust Goggles, Body Armor Set Individual Countermine (BASIC) P3I, Modular Body Armor, Modular Load Bearing Equipment, Auxiliary Aviation Lighting. (3839) Procure test items and initiate DT/OT: JSLIST I Ensemble (chemical protective suits, socks, boots and gloves), Women's Dress Skirt, Improved Fabric for Optional Green Uniform, Personnel Armor System for Ground Troops (PASGT), Small Arms Overvest (urgent Army requirement). (1970) Complete DT/OT and assessment reports, type classify, and/or complete Technical Data Package and transition to production: Women's Dress Ensemble, Maternity Uniform, Ballistic/Laser Eye Protection Spectacle P3I, and Special Protective Eyewear, Cylindrical System. (115) Advanced CVC Helmet now reported in PE/Project 0603747A/D603. SBIR/STTR Adjustments (126) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Modular Body Armor, Modular Load Bearing Equipment. (1000) Procure test items and initiate DT/OT: Improved TAP Suit and Personal Ice Cooling System (Joint Service DT/OT), BASIC P3I. (1105) Complete DT/OT and assessment reports, type classify, and transition to urgent production of contingency supply: PASGT Small Arms Overvest. (100) Starting in FY 96, funds for chemical defense items such as the JSLIST I and II Ensembles will come from OSD to lead Services (JSLIST I = US Marine Corps, JSLIST II = US Army), per Public Law 103-60. DL40 total reflects a \$2.3M transfer to OSD PE 060384BP Chem/Bio Defense. <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Lightweight Microclimate Cooling System. (793) Procure test items and initiate DT/OT: Modular Body Armor, Modular Load Bearing Equipment. (1883) Complete DT/OT and assessment reports, type classify, and/or complete Technical Data Package and transition to production: BASIC P3I, Improved TAP Suit, Personal Ice Cooling System. (1050) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and Equipment	
<ul style="list-style-type: none"> DL40 reflects a \$1.0M transfer to OSD PE 0603884PB Chem/Bio Defense per Public Law 103-60. <p>Project D548 - Military Subsistence System: Engineering and Manufacturing Development (EMD) and Non-Developmental Item (NDI) evaluation of food and food service equipment to enhance soldier efficiency and survivability. New food items and food service equipment will be developed to reduce food service logistics requirements for all four services. Development of Joint Service Food/Food Service Equipment to improve individual combat effectiveness and reduce logistics burden and Operation and Support costs of subsistence support for service men & women. Develop multi-fuel, rapidly deployable field food service equipment to support combat, humanitarian missions and operations-other-than-war. Improve equipment to enhance safety in food service, utilize battlefield fuels and decrease fuel and water requirements. Program is reviewed and validated twice annually by the DoD Food and Nutrition Research and Engineering Board as part of the Joint Service DoD Food Program.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Fabricated prototype Initial Deployment Kitchen for Air Force Base Base as part of the DoD food program. (354) Initiated an NDI integration effort to develop a prototype of a more efficient Containerized Kitchen. (798) Terminated development of a portable water heater and sanitation unit for Marine Corps field feeding system. (114) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Conduct Technical/Operational Testing and type classify the safer, more efficient and supportable Powered Multifuel Burner to replace the gasoline burner. (240) Complete Technical/Operational Testing of the Initial Deployment Kitchen for Air Force. (200) Conduct initial Technical/Operational Testing of the highly mobile Containerized Field Kitchen. (406) SBIR/STTR Adjustments (18) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Initiate pre-planned product improvement to replace the battery with a thermoelectric power supply on the Powered Multifuel Burner. (400) Complete Technical Data Package (TDP) for Initial Deployment Kitchen and transition to Air Force for procurement. (50) Complete development and operational testing of Containerized Field Kitchen. (394) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Complete pre-planned product improvement program for the Powered Multifuel Burner. (390) Develop and conduct user test(s)/evaluation(s) of the planned improvements designed to increase safety, performance and readiness of the Army Field Feeding System-Future in cold and extreme cold environments. (175) Type classify Containerized Field Kitchen and transition to procurement. (272) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and Equipment	
<p>Project D667 - Enhanced Land Warrior: The Enhanced Land Warrior (ELW) program strategy is structured for the continuous modernization of all soldiers: Land Warrior (LW), Mounted Warrior (MW), and Air Warrior (AW). LW is the lead program and the technology carrier for the ELW program. LW is a first generation, integrated soldier system for dismounted combat soldiers. LW is focused to keep pace with the Army Digitization effort and is critical to the digitization of the soldier system to support the Force XXI Concept and the Chief of Staff of the Army's initiative to field an operational digitized force by the year 2000. LW will incorporate mature technologies demonstrated in the Soldier Integrated Protective Ensemble (SIPE) and other RDT&E capabilities by government and industry. LW will enhance the dismounted infantryman's lethality, command and control, mobility, sustainment and survivability. The program encompasses everything the soldier wears or carries for individual use. The backbone of LW will be the radio/computer/Global Positioning System (GPS) and head mounted display. The LW program will leverage NDI components, whenever possible, to provide state-of-the-art digitized technology. LW will also incorporate/integrate equipment from ongoing RDA programs, where appropriate. Less mature technologies not available for acquisition in LW will be demonstrated in the 21st Century Land Warrior (21CLW) Top Level Demonstration (TLD) and then transition to 21CLW development. MW program is planned to follow the LW program and will leverage on LW technology. MW system is needed to enhance combat effectiveness, reduce vulnerability and integrate combat vehicle crewman (CVC) into the digital battlefield.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Project not established until FY 95. <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Continue development of an Advanced CVC helmet to support the MW program. (244) • Conduct market surveys to evaluate state-of-the-art headsets to determine technical feasibility of doing cordless communications. (100) • In-House support to prepare documentation in preparation of Milestone I for Mounted/Air Warriors. (142) • SBIR/STTR Adjustments (10) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Program is not funded in FY 96. <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Conduct LW Development Test (DT) and Pre-production Qualification Test (PPQT) and prepare test support package. (16000) • Fix deficiencies and finalize LW hardware/software design/integration. (10500) • Implement LW functional plans: Integrated Logistics Support (ILS), configuration management, etc. (14000) • Publish LW draft system manuals. (1500) • Program Management and government oversight of contractor effort. (7739) • Procurement of LW long lead items for IOTE. (2000) • Conduct LW logistics demonstration. (500) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment	
5 - Engineering And Manufacturing Development		
<p>Project D668 - Soldier Enhancement Program: This project consists of multiple programs to identify, test and evaluate individual soldier clothing and equipment to improve soldier lethality, survivability, combat effectiveness, quality of life and sustainability. Programs focus on non-developmental items to expedite the research and development process. Programs are categorized in four general areas: weapons and munitions, combat clothing, communications and navigation aids, and food/water/shelter. Programs generally take three years to complete.</p> <p>FY94 Accomplishments:</p> <ul style="list-style-type: none"> Completed development/type classified the AT4 Night Sight Bracket, M249 Sniper Weapon Night Sight, Universal Boresight Device, M249 Squad Automatic Weapon Blank Firing Adapter, 5.56 NATO Armor Piercing Ammunition, 7.62mm Small Arms Light Armor Penetrator (SALAP), Small Unit Health Comfort Pack, Ghillie Suit Accessory Kit, Insulated Food Container, Mounted Water Ration Heater, Neckgaiter, Multi-Faith Individual Ration, Personal Body Armor, Modular Sleeping Bag System, and Personal Hygiene Body Wipe. (1137) Developed/procured prototypes and/or tested the Modular Weapon System, Multiple Magazine Holder, M203 for M4 Carbine, M249 Collapsible Buttstock, Dual Mount, XM144 Spotting Scope, Miniature Binoculars, 40mm Infra-Red (IR) Illumination Round, Portable Periscope, Close Combat Optics, HMMWV Mount, Surveillance Battle Damage Assessment (BDA) Device, 5.56 Dim Tracer, Lightweight Video Reconnaissance System, Lightweight Leader Computer, 40mm Smoke Projectile, Fighting Position Excavator, Soldier Fighting Cover, Electronic Tool Supply Catalog, Fighting Position Revetment Kit, Monocular Night Vision Device, Small Unit Shower, Improved Mechanics Coveralls, Improved Skis and Bindings, Lightweight Underwear, Enhanced Tactical Load Bearing Vest, Mounted Crewman Cold/Wet Glove, Improved Chemical Biological Glove, Lightweight Chemical Overgarment, Trigger Finger Mitten, Second Generation Extended Cold Weather Clothing System (2nd Gen ECWCS) (Parka/Trousers), Combat Medic Vest, Individual Soldier Enhanced Ration, Inconspicuous Body Armor, Dual Mount, Improved Butt Pack, Improved Rain Suit, Sock System, Improved Shelter, Improved Hot Weather Boot, and Improved Personal Armor System Ground Troops (PASGT) Helmet Suspension. (14202) Began development on the M249 Flash Suppressor/Blast Attenuator, Stun Grenade, 56 caliber Multiple Purpose Round, PASGT Liner (Parachutist), and the Mounted Crewman Boot. (709) Terminated and/or redirected efforts on the XM 192 Lightweight Tripod, 40mm High Velocity Tracer, and 40mm Canister Round for the M19. (122) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Complete development/type classify the XM144 Spotting Scope, Medium Machine Gun, M24 Flash Suppressor/Blast Attenuator, 5.56 Dim Tracer, Dual Mount, M203 for M4 Carbine, Multiple Magazine Holder, Miniature Binoculars, M249 Collapsible Buttstock, Portable Periscope, Close Combat Optics, 50 caliber Multiple Purpose Round, Stun Grenade, Launched Grapple Hook, Mounted Crewman Cold/Wet Glove, Enhanced Tactical Load Bearing Vest, Lightweight Underwear, 2nd Gen ECWCS, Improved Butt Pack, Small Unit Shower, Electric Tool Supply Catalog, Dual Mount, Lightweight Video Reconnaissance System, Individual Soldier Enhanced Ration, Interim Water Individual Purification System, and Inconspicuous Body Armor. (6159) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment	
<ul style="list-style-type: none"> Develop/procure prototypes and/or test the Modular Weapon System, 40mm IR Illumination Round, HMMWV Mount, Surveillance BDA Device, Improved Chemical/Biological Glove, Mounted Crewman Boot, Lightweight Chemical Overgarment, Fighting Position Excavator, Soldier Fighting Cover, Fighting Position Revetment Kit, Monocular Night Vision Device, Lightweight Leader Computer, and 40mm Smoke Grenade. (6308) Begin market surveys and/or development of the following FY 1995 new starts: Armor Crew Infantry Protective Mask, Soldier Radio, Medium Machine Gun, Machine Gun Optics, Improved Floatation Device, Face Paint, and Individual Sandbagging Accessory. (2866) Terminate/suspend the Trigger Finger Mitten, Individual Air Activated Catalytic Heater, and Enhanced Incendiary Grenade programs. (0) Reprogramming. (220) SBIR/STTR Adjustments (334) 		
FY 1996 Planned Program		
<ul style="list-style-type: none"> Complete development/type classify the Modular Weapon System, 40mm IR Illumination Round, Surveillance BDA Device, HMMWV Mount, Mounted Crewman Boot, Combat Medic Vest, Improved Floatation Device, Soldier Radio, Lightweight Leader Computer, Soldier Fighting Cover, Fighting Position Revetment Kit, 40mm Smoke Grenade, Armor Crew/Infantry Mask, and Individual Sand Bagging Accessory. (3296) Development/procure prototypes/test Machine Gun Optics, and Face Paint. (1852) Complete DT/OT on the Lightweight Chemical Overgarment and Improved Chemical/Biological Glove. (400) Initiate market surveys/development on items identified for development in FY 1996 (since these are three year Non Developmental Items programs, requirement documentation will not be developed until FY 1995 for FY 1996 programs). (5142) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Complete development/type classify the Lightweight Chemical Overgarment, Improved Chemical/Biological Glove, Soldier Radio, Machine Gun Optics, and Face Paint. (1176) Continue work/testing on FY 1996 projects (based on March 1995 Soldier Enhancement Program Review). (5370) Initiate market surveys/development on items identified for development in FY 1997 (since these are three year Non Developmental Items programs, requirement documentation will not be developed until FY 1996 for FY 1997 programs). (3775) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and Equipment		
B. Program Change Summary:			
Previous President's Budget	FY 1994	FY 1995	FY 1996
Appropriated Value	28389	25058	27466
Adjustments to Appropriated Value	28389	24,19	
a. SBIR/STTR (-441)	-1381		
b. Reprogramming total (-940)			
Current Budget Submission/President's Budget	27008	24719	17959
			67971

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RDTE&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604713A Combat Feeding, Clothing and Equipment								DC40	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC40 Unit/Organizational Equipment		4085	1422	4220	848	1888	2022	1506	1468	Continuing	Continuing
C. Other Program Funding Summary											
Other Procurement Army Activity 3: Force Provider (M80200)		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
			10664	12275	12127	12327	6880	6910	13329		74512
D. Schedule Profile											
Conducted Force Provider OT		FY 1994			FY 1995		FY 1996		FY 1997		
Type classified Force Provider		1	4	1	2	4	1	4	1	2	4
Complete PPQT of Space Heater		X*									
Convective						X					
Conduct TT for Force Provider P31								X			
Complete TT/OT of LADS											X
TC Modular General Purpose Tent System							X				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604713A Combat Feeding,Clothing and Equipment	DC40	

<u>A. Project Cost Breakdown</u>						
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>		
Primary Hardware Development	4065	1393	4220	848		
SBIR/STTR Adjustment		29				
Total	4065	1422	4220	848		
<u>B. Budget Acquisition History and Planning Information</u>						
<u>Performing Organizations</u>						
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Total Program
Product Development Organizations						
Hunter Mfg, Army Research Lab, Acuren, White Sands Range, General Missile Services			N/A*	N/A*	2754	Cont
Support and Management Organizations						
Soldier Systems Command Test and Evaluation Organizations					350	Cont
TECOM, CSTA					400	Cont

- DC40 Program line is ongoing in nature, and is made up of multiple projects which are on separate project schedules, as a result, the EAC, Budget to Complete and Total Program Categories are not applicable to DC40.

Government Furnished Property: N/A

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE					
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and Equipment			DC40		
	Total					
	Prior to			Budget to		Total
	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Program
Subtotal Product Development	2754	1650	576	1695	341	Cont
Subtotal Support and Management	350	420	145	425	85	Cont
Subtotal Test and Evaluation	400	1995	701	2100	422	Cont
Total Project	3504	4065	1422	4220	848	Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 - Engineering And Manufacturing Development										DL40	
PE NUMBER AND TITLE										0604713A Combat Feeding, Clothing and Equipment	
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
DL40 Clothing and Equipment	5507	6050	2205	3728	4091	4880	4052	5071	Continuing	Continuing	
C. Other Program Funding Summary											
OMA	FY 1994 2890	FY 1995 7050	FY 1996 5960	FY 1997 6130	FY 1998 6130	FY 1999 6020	FY 2000 6020	FY 2001 6020	To Compl cont	Total Cost cont	
D. Schedule Profile											
1	FY 1994 2	3	4	1	2	3	4	1	2	3	4
Type Classify (TC) Aircrew Cold Weather Clothing & Women's Oxford Shoe											
Eye Protection (BLPS P3/SPEC)											
Complete DT/OT & Reports/TC		X*	X	X							
PASGT Small Arms Overvest Complete Testing/TC					X	X					
Improved TAP Suit/PICS Conduct Market											
Improved TAP Suit/PICS Complete DT/OT		X*						X			
Improved TAP Suit/PICS Complete Testing Reports/TC									X		
Modular Body Armor & LBE Complete DT/OT & Reports											
Modular Body Armor & LBE Complete Designs and Early Evaluation/Complete DT/OT and Reports											X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	PROJECT																				
BUDGET ACTIVITY	PE NUMBER AND TITLE																						
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and Equipment		DL40																				
<p>A. Project Cost Breakdown</p> <table border="1"> <thead> <tr> <th></th> <th>FY 1994</th> <th>FY 1995</th> <th>FY 1996</th> <th>FY 1997</th> </tr> </thead> <tbody> <tr> <td>Primary Hardware Development</td> <td>5507</td> <td>5824</td> <td>2205</td> <td>3726</td> </tr> <tr> <td>SBIR/STTR Adjustment</td> <td></td> <td>126</td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td>5507</td> <td>6050</td> <td>2205</td> <td>3726</td> </tr> </tbody> </table> <p>B. Budget Acquisition History and Planning Information: N/A</p>					FY 1994	FY 1995	FY 1996	FY 1997	Primary Hardware Development	5507	5824	2205	3726	SBIR/STTR Adjustment		126			Total	5507	6050	2205	3726
	FY 1994	FY 1995	FY 1996	FY 1997																			
Primary Hardware Development	5507	5824	2205	3726																			
SBIR/STTR Adjustment		126																					
Total	5507	6050	2205	3726																			

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RD&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604713A Combat Feeding, Clothing and

Equipment

COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D548	Military Substance System	1266	864	844	837	969	1440	1848	1996	Continuing	Continuing

C. Other Program Funding Summary:

**Other Procurement Army Activity 3 M86400
Kitchen, Containerized, Field**

D. Schedule Profile

[illegible]

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604713A Combat Feeding, Clothing and Equipment

D548

A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997
Primary Hardware Development	1266	846	844	837
SBIR/STTR Adjustment		18		
Total	1266	864	844	837

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Contract

Government Method/Type or Funding Vehicle

Award or Obligation Date

Performing Activity EAC

Project Office EAC

Total Prior to FY 1994

FY 1994

FY 1995

FY 1996

FY 1997

Budget to Complete

Total Program

Product Development Organizations

Natick, CECOM, General

Technical Services

Support and Management Organizations

Soldier Systems Command

Test and Evaluation Organizations

TECOM, OPTEC

3729

1104

570

548

543

249

72

44

42

42

994

90

250

254

252

Government Furnished Property: N/A

Total

Prior to

FY 1994

FY 1995

FY 1996

FY 1997

Budget to Complete

Total Program

Subtotal Product Development

Subtotal Support and Management

Subtotal Test and Evaluation

Total Project

3729

1104

570

548

543

249

72

44

42

42

994

90

250

254

252

4972

1266

864

844

837

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

0604713A Combat Feeding, Clothing and Equipment

PROJECT

D667

5 - Engineering And Manufacturing Development

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
										Continuing
D667 Enhanced Land Warrior	0	496	0	52239	34761	23610	18129	25498		Continuing

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, Budget Activity 4 PE 0603747A	3768*	5458	25935	9453		52342	52479	63304	154731	195507
OPA3, M80500 Enhanced Land Warrior						2524			131022	299147
WTCV, GB3007 Mod Wpn Sys - M4 Carbine Mod			930	2206	2287	7559				7947
WTCV, GZ2800 Mod Wpn Sys (M16/M203)	2024	639	2842	5767	8081					26912

*Note: Land Warrior was a portion of Project D669 within PE 0603747A.

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
1	2	3	4	1	2	3	4	1	2
ORD Approved									
Milestone I/II Decision									
Contract Award									
Fabricate OT Prototypes									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									PROJECT
5 - Engineering And Manufacturing Development		0604713A Combat Feeding, Clothing and Equipment									D668
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D668 Soldier Enhance Program		16170	15887	10880	10321	10752	10811	13407	14638	Continuing	Continuing
C. Other Program Funding Summary											
Operations & Maintenance, Army (OMA)		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
Other Procurement, Army:		28971	70496	59566	61283	61283	60154	60154	60154	Compl	Cost
K30800 Lightweight Video Reconnaissance Sys										Cont	Cont
MA6800 Soldier Enhancement Program		9200	2210	2354	2696	3412	4221				14893
W63800 Lightweight Leader Computer					6840	8814					9200
Weapons & Tracked Combat Vehicles (WTCV)											15654
GC0076 Small Arms (SEP)				2428	2525	1294	1294				7541
GZ1290 Squad Automatic Weapon (MODS)			1943								1943
GZ2800 Modified Weapons Systems (M16/M203)		2024	639	2842	5767	8081	7559				26912
F88000 CTG Cal .50 (M904)/SLAPT				1041		351	868	787	943		3990
GB3007 Modified Weapons Systems (M4 Carbine)				930	2206	2287	2524				7947
D. Schedule Profile: Approximately 50 individual projects are ongoing under the Soldier Enhancement Program (SEP) and each project has its own milestone schedule.											
1	SEP Requirements Review	FY 1994	FY 1995			FY 1996			FY 1997		
		2	3	4	1	2	3	4	1	2	3
	SEP Programs Review	X*			X		X			X	
				X*							X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604713A Combat Feeding, Clothing and Equipment

D668

A. Project Cost Breakdown

D668 - Soldier Enhancement Program	FY 1994	FY 1995	FY 1996	FY 1997
	16170	15887	10690	10321
Total	16170	15887	10690	10321

B. Budget Acquisition History and Planning InformationPerforming Organizations

Contractor or Contract

Government Method/Type
Performing or FundingAward or Obligation
DatePerforming Activity
EACProject Office
EACTotal Prior to
FY 1994

FY 1994 FY 1995 FY 1996 FY 1997

Budget to Complete

Total Program

Product Development Organizations

PM Small Arms, Natick,

PM Mines, Countermines

and Demolitions

Support and Management Organizations

Soldier Systems Command

Test and Evaluation Organizations

TECOM

Government Furnished Property: N/A

16170 15887 10690 10321

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604715A Non-System Training Devices Engr Dev

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	57004	47028	55303	53343	66081	54031	82160	64636	Continuing	Continuing
DC82 Louisiana Maneuvers	0	5848	5973	4987	4005	4021	3997	3990	Continuing	Continuing
DC91 Distributive Interactive Simulation	0	3445	6131	3745	11328	6992	17063	14053	Continuing	Continuing
D241 Non-System Training Devices Combined Arms	42790	24680	31121	31314	36732	29923	46811	31928	Continuing	Continuing
D396 Tactical Simulation (TIARA)	5173	3448	2083	2879	3205	2382	3997	3990	Continuing	Continuing
D573 STRICOM and Naval Air Warfare Center Training Systems Division	9041	9808	9987	10418	10811	10713	10492	10675	Continuing	Continuing

A. Mission Description and Budget Item Justification: Program Element funds engineering development of Non-System Training Devices to support force-on-force training at the Combat Training Centers (CTC), general military training and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Training devices and training simulations provide force multipliers that improve combat effectiveness by providing realistic training while helping to control rapidly escalating costs. Training devices maximize the transfer of knowledge, skills and experience from the training situation to a combat situation. Force-on-force training at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Chaffee, AR, and Combat Maneuver Training Center (CMTC), Hohenfels, Germany; and battlestaff training in Battle Command Training Program (BCTP) will provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project DC82, Louisiana Maneuvers, is intended to energize and guide the restructuring of the Army while simultaneously keeping it combat-ready for any contingency. Project DC91, Distributive Interactive Simulation (DIS), includes engineering development of techniques and technology for DIS and related simulations and simulator efforts. Project D241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs. Project D396 Tactical Simulation, is an intelligence simulation/driver for both training (intelligence driver for Corps Battle Simulation (CBS)) and testing. Project D573, STRICOM/Naval Air Warfare Center Training Systems Division (NAWCTSD) Support, funds in-house costs of project support by US Army Simulation, Training and Instrumentation Command (STRICOM) and NAWCTSD. Projects D241, D396 and D573 in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

DC82 - Louisiana Maneuvers (LAM): LAM will serve as a laboratory for the Army to practice its roles and missions, to develop and explore options, to assess and direct progress, to provide a framework for decisions by senior leaders, and to facilitate the Army's transformation. LAM will consist of a series of related exercises forming a campaign to assess the Army of the 21st century in areas of policy, doctrine, organization, training, materiel, leader development, and soldier issues shaping the force. As an evolving process, LAM will exploit the results and outcomes of each exercise by incorporating lessons learned in order to enhance the value of follow-on

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604715A Non-System Training Devices Engr Dev	
<p>exercises. Overall, LAM will focus the Army's self-assessment of institutional effectiveness, provide direction for change, and orient the Army's leadership to accomplish the national military strategy with available resources.</p>		
<p>FY94 Accomplishments: Funded under project D241. Restructured to DC82 in FY 95</p>		
<p>FY 95 Planned Program:</p> <ul style="list-style-type: none"> • Continue development of database tools for theater-level exercises (2448) • Initiate development of simulation linkages (1468) • Conduct issue investigation by AMC, TRADOC, FORSCOM & Strategic Space Defense Cmd (1809) • SBIR/STTR (123) 		
<p>FY 96 Planned Program:</p> <ul style="list-style-type: none"> • Continue development of database tools for theater-level exercises (2500) • Continue development of simulation linkages (1500) • Continue issue investigation by AMC, TRADOC, FORSCOM & Strategic Space Defense Cmd (1973) 		
<p>FY 97 Planned Program:</p> <ul style="list-style-type: none"> • Continue development of database tools for theater-level exercises (2500) • Continue development of simulation linkages (1500) • Continue issue investigation by AMC, TRADOC, FORSCOM & Strategic Space Defense Cmd (987) 		
<p>DC91 - Distributive Interactive Simulation (DIS) - DIS technology provides wide area simulation networking in support of modeling and simulation, doctrinal development, training, and operations, utilizing live, virtual and constructive simulations. This project was established in FY 95 and funding restructured from Project D241 to allow better tracking of DIS efforts.</p>		
<p>FY94 Accomplishments: Funded under project D241. Restructured to Project DC91 in FY 95.</p>		
<p>FY 95 Planned Program:</p> <ul style="list-style-type: none"> • Continue DIS site operations (1415) • Initiate systems engineering and integration contract (1958) • SBIR/STTR (72) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604715A Non-System Training Devices Engr Dev	
<p>FY 96 Planned Program:</p> <ul style="list-style-type: none"> • Provide system engineering, configuration management, and standard development for core DIS facilities (2434) • DIS verification, validation and accreditation (2450) • Provides enhancements to and integration of simulation software upgrades to support Advance Warfighting experiments (1255) <p>FY 97 Planned Program:</p> <ul style="list-style-type: none"> • Provides system engineering, configuration management, and standard development for core DIS facilities (1395) • DIS Verification, validation and accreditation (2350) <p>D241 - NSTD Combined Arms: This project is used to develop prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army, to include the Reserve Components. JANUS is a simulation to train Commanders and Battle Staff in the execution of close battle operations. Corps Battle Simulation (CBS) is the Army's standard command and staff training simulation at the corps/division level. Combat Service Support Training Simulation System (CSSTSS) is a training simulation which supports training at battalions through echelons-above-corps levels to provide the level of detail required to train logistics commanders and staffs. CSSTSS will be linked to CBS to provide integrated maneuver and logistics training. Distributed Interactive Simulation (DIS) will allow training simulations representing different weapons systems and command levels at geographically dispersed locations to interact with one another in real time to provide more realistic combined arms training. Warfighter Simulation (WARSIM) will be the next generation battle simulation to replace CBS and Brigade/Battalion Battle Simulation (BBS). WARSIM will comply with DIS standards and open architecture to meet the Army's training requirements into support and linkage to other simulations and simulators. WARSIM will provide additional weapon system capabilities during tactical engagement exercises. Simulated Area Weapons Effects-Radio Frequency (SAWE-RF) simulates area weapons effects using distributed processing techniques and a radio frequency communications system. The Area Weapons Scoring System (AWSS) is the standard objective scoring system for aviation crew gunnery qualifications. The Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) will provide the initial capability for sustainment training for military intelligence units. Additionally, this project provides for the development of maintenance simulators for many Army weapon systems. This project funds the development of training devices, simulators, simulations and instrumentation for the Combat Training Centers (CTC's) to include Opposing Forces Surrogate Vehicles (OSV's) for display of doctrinally correct threat at the CTC's. The Air Ground Engagement System II (AGES II) will permit the inclusion of aviation assets in MILES tactical engagement exercises. Devices developed will enable the Army to train units collectively to obtain synergistic results through the employment of weapons and support systems in their respective battlefield roles. The Fire Support Combined Arms Tactical Trainer (FSCATT), provides for initial and sustainment gunnery training, and can be linked as part of the CATT family. FSCATT is designated as the Army's only defense acquisition pilot program IAW the Federal Acquisition Streamlining Act (FASTA)</p> <p>FY94 Accomplishments:</p> <ul style="list-style-type: none"> • Initiated development of MILES II for crew served and individual weapons (1034); FSCATT Phase I (385); CBS 1.5.2 (3194); STOW-E (250); architecture and test bed for WARSIM 2000 (2796); After Action Review system for BCTP (536) • Initiated enhancement of After Action Report (AAR) for Armywide CBS use (164) • Continued limited BBS enhancement (737) 		

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604715A Non-System Training Devices Engr Dev

- Continued development of AGES II upgrades (4517); M113/BMP-2 Opposing Force Surrogate Vehicle (1383); CSSTSS (7878); devices, simulators and simulations to support training at the National Training Center (NTC), Joint Readiness Training Center (JRTC), and BCTP (5442); and CBS 1.5 (1448)
- Initiated development of AGES II (AH-64) interface with CTC instrumentation (1422)
- Completed testing of Precision Gunnery Training System (1895); and GUARDFIST I (164)
- Completed Initial Operational Test & Evaluation of SAWE-RF (3091)
- Provided support of Louisiana Maneuvers exercises and CINC training initiatives (3092)
- Provided system engineering, configuration management, hardware maintenance and daily operation of the core DIS facilities (3362)

FY 95 Planned Program:

- Initiate development of CBS 1.5.3 (1488)
- Complete development of AGES II upgrades (1445); CSSTSS (5693); FSCATT Phase I (5755); and devices, simulators and simulations to support training at the CTC's (i.e., NTC, JRTC, CMTC and BCTP) to include completing development of CTC-IS interface Ages II) (1572)
- Continue architecture development and initiate Engineering Manufacturing Development for WARSIM 2000 (4735)
- Continue limited BBS enhancements (580)
- Continue enhancements of BCTP AAR for Armywide CBS (731)
- Complete development of M113 OSV (500); and CBS 1.5.2 (1487); and GUARDFIST I (175)
- SBIR/STTR (519)

FY 96 Planned Program

- JANUS development of battle focus trainer enhancements to existing software baseline (429)
- Continue limited BBS enhancements (515); development of the CSSTSS (3362); and development of devices, simulators and simulations to support training at the NTC, JRTC, CMTC & BCTP (1889)
- Complete CBS 1.5.3 and continue limited enhancements to CBS (3003)
- Exercise contract option for Prime WARSIM EMD (10295)
- Complete development of FSCATT Phase I (6006);
- Initiate SAWE-RF downsized man worn system (2188); and development of IEWTPT (3434)

FY 97 Planned Program

- JANUS development of battle focus trainer enhancements to existing software baseline (498)
- Continue limited BBS and CBS enhancements (4080); development of the CSSTSS (2988); WARSIM 2000 EMD (18304); and IEWTPT (4558) and development of devices, simulators and simulations to support training at the NTC, JRTC, CMTC & BCTP (87)
- Initiate development of MILES 2000 for new weapon systems (i.e., armored gun system and Bradley A3 (799)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604715A Non-System Training Devices Engr Dev	
D396 - Tactical Simulation (TACSIM): TACSIM is a TIARA program. Funds development and testing support of TACSIM.		
FY 94 Accomplishments: <ul style="list-style-type: none"> • Completed TACSIM version 2.1.5 development (1731) • Initiated TACSIM 2.1.6 development (800) • Continued TACSIM/CBS development for CBS (2422) • Initiated TACSIM/Aggregate Level Simulation Protocol (ALSP) interface development (220) 		
FY 95 Planned Program: <ul style="list-style-type: none"> • Complete TACSIM 2.1.6 development (1050) • Complete TACSIM/CBS development for CBS (590) • Initiate TACSIM 2.1.7 development (1028) • Continue TACSIM/ALSP interface development (218) • Initiate development of Warfighters' Simulation (WARSIM) intelligence capability (490) • SBIR/STTR (72) 		
FY 96 Planned Program: <ul style="list-style-type: none"> • Complete TACSIM 2.1.7 development (868) • Complete TACSIM/ALSP interface development (175) • Initiate TACSIM 2.1.8 development/compatibility with CBS (565) • Continue development of Warfighters' Simulation (WARSIM) intelligence capability (475) 		
FY 97 Planned Program: <ul style="list-style-type: none"> • Complete TACSIM 2.1.8 (800) • Initiate minor TACSIM enhancements (186) • Continue development of Warfighters' Simulation (WARSIM) intelligence capability(1893) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		
5 - Engineering And Manufacturing Development		February 1995
PE NUMBER AND TITLE 0604715A Non-System Training Devices Engr Dev		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1997
Appropriated Value	57188	46191
Adjustments to Appropriated Value	57188	
a. SBIR/STTR decrement (-804)	-804	
b. Reprogramming total (620)	620	
Current President's Budget Submit	57004	53343
	FY 1995	FY 1996
	48329	55060
	47029	
	47029	55303

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 - Engineering And Manufacturing Development										DC82	
PE NUMBER AND TITLE										0604715A Non-System Training Devices Engr Dev	
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
DC82 Louisiana Maneuvers	0	5848	5973	4987	4005	4021	3997	3990	Continuing	Continuing	
<u>C. Other Program Funding Summary</u>											
OPA2, Appropriation	FY 1994 433	FY 1995 846	FY 1996 941	FY 1997 774	FY 1998 171	FY 1999 147	FY 2000 149	FY 2001 994	To Compl Cont'd	Total Cost Cont'd	
BE4162 MACOM Automation Systems											
<u>D. Schedule Profile</u>											
Development of database tools for theater-level exercises	1	2	3	4	1	2	3	4	1	2	3
Simulator Linkages	X*	X*	X	X	X	X	X	X	X	X	X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE	FY 1994	FY 1995	FY 1996	FY 1997
5 - Engineering And Manufacturing Development	0604715A Non-System Training Devices Engr Dev				
A. Project Cost Breakdown					
Development of database tools for theater-level exercises		0	2448	2500	2500
Development of simulation linkages		0	1468	1500	1500
Issue investigation by AMC, TRADOC, FORSCOM &		0	1809	1973	987
Strategic Space Defense Command (SSDC)					
SBIR/STTR			123		
Total			5848	5973	4987
B. Budget Acquisition History and Planning Information: NOT APPLICABLE					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604715A Non-System Training Devices Engr Dev

DC91

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC91 Distributive Interactive Simulation	0	3445	6139	3745	11328	8992	17063	14053	Continuing	Continuing

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, Budget Activity 5	0	6412	0	0	0	0	0	0	0	6412
PE 0604760A Project DC81 Battle Lab Reconfigurable Simulators	0	8385	0	0	0	0	0	0	0	8385
RDTE, Budget Activity 4	0	0	12616	7152	0	0	0	0	0	19768
PE 0603760A Project DC80 Battle Lab Reconfigurable Simulators	0	0	12100	12200	12300	12400	12500	12600	Cont'd	Cont'd
OPA3, Appropriation										
KA6000, Reconfigurable Simulators										
OMA, Reconfigurable Simulators										

D. Schedule Profile

	FY 1994		FY 1995		FY 1996		FY 1997				
1	2	3	4	1	2	3	4	1	2	3	4
Award SEI Contract											
DIS Verification and Validation											
Simulator Upgrades											
Reconfigurable Simulator Program											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
5 - Engineering And Manufacturing Development		0604715A Non-System Training Devices Engr Dev		DC91	
A. Project Cost Breakdown					
		FY 1994	FY 1995	FY 1996	FY 1997
Operate DIS facilities		0	1415		
Award SEI Contract		0	1958		
Develop module definition for Soldier Combat Service Support & early entry SIMS		0		2434	1395
Simulation Software upgrades		0		1255	
DIS Verification and Validation		0		2450	2350
SBIR/STTR			72		
Total			3445	6139	3745
B. Budget Acquisition History and Planning Information: NOT APPLICABLE					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604715A Non-System Training Devices Engr Dev D241

PROJECT

ngvr Dev D241

COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D241	Non-System Training Devices Combined Arms	42780	24680	31121	31314	36732	29923	46611	31928	Continuing	Continuing

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To Compl	Total Cost
									Cont'd	Cont'd
OPA3, Appropriation										
NA0100 Training Devices, Nonsystem	78774	85323	71561	102660	70903	90890	97430	112246		
OPA3, Appropriation										
MA6600 CTC Support	22919	21086	22208	5609	13919	14914	33803	34802		
OPA3, Appropriation										
NA0174 Fire Support Combined Arms Tactical	0	0	0	22152	21044	30190	27280	16686		

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
	1	2	3	4
WARSIM Contract Award				
JANUS CDR				
CSSTSS CDR	X*			
CSSTSS Milestone III IPR				
BCTP AAR Contract Award				
AWSS Contract Award				
AGES II Field Development Test				
GUARDFIST I Milestone III				
JRTC-IS IOC				
FSCATT IOC				
M113 OSV Milestone I/IIIA				
M113 OSV Milestone III				
SAWE-RF Milestone III IPR				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604715A Non-System Training Devices Engr Dev	D241	
A. Project Cost Breakdown			
System Development	FY 1994	FY 1995	FY 1996
Test and Evaluation	42231	23485	29885
Technical Data	395	626	1000
SBIK/STTR	164	50	236
Total	42790	24680	31121
FY 1997			
			30642
			87
			585
B. Budget Acquisition History and Planning Information: NOT APPLICABLE			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT			
5 - Engineering And Manufacturing Development		0604715A Non-System Training Devices Engr Dev								D396			
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D396	Tactical Simulation (TIARA)	5173	3448	2083	2879	3205	2382	3997	3990	Continuing	Continuing		
C. Other Program Funding Summary: NOT APPLICABLE													
D. Schedule Profile													
Software Build		FY 1994		FY 1995		FY 1996		FY 1997					
1	2	3	4	1	2	3	4	1	2	3	4		
			X*				X				X		
Developmental Test and Evaluation		X*			X		X		X				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
5 - Engineering And Manufacturing Development		0604715A Non-System Training Devices Engr Dev		D396	
A. Project Cost Breakdown					
Software Development	FY 1994	FY 1995	FY 1996	FY 1997	
System Engineering	1460	938	538	772	
Configuration Management	1129	760	537	587	
Technical Data	930	610	370	566	
Developmental Test and Evaluation	729	460	269	385	
SBIR/STTR	925	608	369	569	
Total	5173	3448	2083	2879	
B. Budget Acquisition History and Planning Information: NOT APPLICABLE					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT			
5 - Engineering And Manufacturing Development		0604715A Non-System Training Devices Engr Dev								D573			
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D573	STRICOM and Naval Air Warfare Center Training Systems Division	9041	9906	9987	10418	10811	10713	10492	10875	Continuing	Continuing		

C. Other Program Funding Summary: NOT APPLICABLE

D. Schedule Profile: The nature of this project does not lend itself to acquisition milestones.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
5 - Engineering And Manufacturing Development		0604715A Non-System Training Devices Engr Dev		D573	
<u>A. Project Cost Breakdown</u>					
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	
Fund STRICOM Personnel	6505	6706	6795	6940	
Fund NAWCTSD Support	1500	1584	1689	1862	
Front End Analysis	1036	1254	1503	1616	
SBIR/STTR		64			
Total	9041	9608	9987	10418	
<u>B. Budget Acquisition History and Planning Information: NOT APPLICABLE</u>					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604716A Terrain Information - Engineering Development (TIARA)								D579	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D579	Field Army Map Sys Eng Dev	9375	10213	9011	7630	3214	2986	2398	1896	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification: This program element funds development of two systems: Digital Topographic Support System (DTSS) and Quick Response Multicolor Printer (QRMP). The current terrain analysis, topographic and reproduction support provided by Army Engineer Terrain Teams are slow, labor intensive processes that do not meet the needs of the digitized battlefield in which the commander must have the ability to rapidly obtain terrain information and topographic products. DTSS will automate the updating and processing of terrain information into terrain analysis products and disseminate them rapidly within Command and Control systems. QRMP will provide rapid reproduction of low volume, up-to-date, large format, full color imagery maps, situation overlays, special graphics (e.g., captured enemy maps) and other topographic and terrain products. Three blocks of Pre-Planned Product Improvements (P3I) are authorized including: downsizing, terrain visualization, imagery exploitation, increased internal and communications throughput, and others. Part of imagery exploitation includes the development of a Multi-Spectral Imagery Processor (MSIP), which provides an image map making capability. Commercial DTSS-MSIP systems will be provided to Army Engineer Terrain Teams as an interim solution for making image maps. Using the most current technology available, the functional capabilities of DTSS and QRMP will be developed into a single interoperable architecture. The projects in this Program Element support research efforts in the engineering and manufacturing development (E&MD) phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.</p> <p>The Acquisition Strategy being pursued for the DTSS/QRMP EMD phase is to utilize Army standard equipment and the Common Hardware/Software (CHS) computer workstations in conjunction with non-development items (NDI) components to develop an integrated baseline hardware configuration. The plan is to utilize the Combat Terrain Information System (CTIS) System Engineering and Integration (SE&I) contractor to execute the EMD phase and to perform system integration and provide units for formal test and evaluation. The procurement of the Multi-Spectral Image Processor (MSIP) was approved by the Army. The acquisition of the MSIP will rely on existing contracts and commercial-off-the-shelf (COTS) to the fullest extent possible.</p> <p>Program Management responsibility and milestone decision authority have been assigned to the Program Executive Officer for Command and Control Systems (PEO CCS). Project management is provided by the Project Director (PD) for Combat Terrain Information Systems.</p> <p>The contracting strategy for the DTSS/QRMP program is to execute the EMD phase through the current SE&I contractor, Martin Marietta Corporation. A competitive Cost Plus Fixed Fee (CPFF) contract was awarded for the CTIS SE&I contract. A competitively awarded, Firm Fixed Price (FFP) contract is anticipated for the Full Rate Production of the DTSS/QRMP. The computer workstations for CTIS programs are being procured through the PM for Common Hardware and Software.</p> <p>FY 1994 Program Accomplishments:</p> <ul style="list-style-type: none"> Continued DTSS Block I P3I Development (5100) Initiated Development of DTSS-MSIP (500) Initiated Development of Integrated Downsized DTSS/QRMP (3275) Deployed and Upgraded QRMP Early Field Prototypes (500) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604716A Terrain Information - Engineering Development (TIARA)	D579	
FY 1995 Planned Program: <ul style="list-style-type: none"> Develop DTSS Low Rate Initial Production (LRIP) Upgrade (1699) Complete Development of DTSS-MSIP (300) Complete DTSS Block I P3I and Conduct Test and Evaluation (Software) (1000) Continue Development of Downsize DTSS/QRMP (6500) Continue P3I Program (Communications) (500) Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (214) 			
FY 1996 Planned Program: <ul style="list-style-type: none"> Complete Development of DTSS LRIP Upgrade (1900) Continue Development of Downsize DTSS/QRMP (6311) Continue P3I Program (Interoperability) (700) Initiate Test and Evaluation of EMD Prototypes (100) 			
FY 1997 Planned Program: <ul style="list-style-type: none"> Complete Development of Downsize DTSS/QRMP (4800) Complete Test and Evaluation of Developmental Prototypes (500) Continue P3I Program (Interoperability) (2330) 			
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value = SBIR/STTR decrement (148) Current President's Budget		FY 1994 9523 9523 -148 9375	FY 1995 10547 10213 10213
		FY 1996 8527	FY 1997 6580 7630
Change Summary Explanation: Funding: Funding profile was restructured to reflect approved April 1994 CTIS Modernization Plan. This plan approved the downsizing of the DTSS/QRMP systems, resulting in minor RDT&E and Other Procurement, Army appropriation adjustments. Schedule: Since the previous President's budget submission, revisions to the program schedule have become necessary in response to requirements identified in the CTIS Modernization Plan. Technical: No change to technical requirements as a result of CTIS Modernization Plan			

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604716A Terrain Information - Engineering
Development (TIARA)C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
	10412	7779	6954	6683	8160	5110	1988	2486	Compl	Cost
									CONT	CONT
OPA - KA2550 - DTSS										

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
	1	2	3	4	1	2	3	4	Compl	Cost
									CONT	CONT
Achieve DTSS First Unit Equipped (FUE)										
MSIP Mission Need Statement Approved										
Initiate Procurement of MSIP Hardware										
Award Downsize DTSS/QRMP EMD										
Task Order										
Conduct MSIP Beta Testing										
Initiate Delivery of MSIP to Terrain										
Teams										
Develop DTSS LRIP Upgrade										
Incorporate DTSS LRIP Upgrades										
Conduct Downsize DTSS/QRMP										
Developmental Test and										
Evaluation/Operational Test and										
Evaluation (DT&E/OT&E)										
Initiate Fielding of Upgraded DTSS LRIP										
Systems										
Downsize DTSS/QRMP MS III										

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RD T&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY											
5 Engineering And Manufacturing Development											
PE NUMBER AND TITLE											
0604716A Terrain Information - Engineering Development (TIARA)											
Contract or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
MITRE Corp	FFRDC thru					700	500	500	500	CONT	CONT
McLean, VA	CECOM					1300	1300	1000	1800	CONT	CONT
OGAs	MIPR					300	400	300	1000	CONT	CONT
Test and Evaluation Organizations											
TECOM	MIPR										
Government Furnished Property											
Contract											
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property											
CHS Computers	MIPR	30 Oct 94	30 Jan 95			0	500	0	0	CONT	CONT
Support and Management Property						0	0	0	0	CONT	CONT
Test and Evaluation Property											
						0	0	0	0	CONT	CONT
Subtotal Product Development											
Subtotal Support and Management					34200	6675	7613	6811	3930	CONT	CONT
Subtotal Test and Evaluation						2400	2200	1900	2700	CONT	CONT
Total Project					*34200	300	400	300	1000	CONT	CONT
						9375	*10213	9011	7630	CONT	CONT
* Prior year funding only covers the Prime Contractors. FY 95 SBIR/STTR (214)											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604740A Tactical Surveillance System - Engineering Development (TIARA)								D662	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D662 Tactical Surveillance System - Eng Dev		37534	2093	0	0	0	0	0	0	0	N/A

A. Mission Description and Budget Item Justification: In FY94 and prior, this project supported engineering development work directed at meeting the deep intelligence and targeting needs of tactical commanders, as stated in Field Manual 100-5 and under Airland Battle tactics, to fight out-numbered and win. Specific tactical imagery exploitation studies and developments are under the Army's Tactical Exploitation of National Capabilities (TENCAP). This Program Element (PE) includes efforts to maintain sensor interfaces, modernize the existing Modernized Imagery Exploitation Systems (MIES), perform engineering development of the hardware of the Enhanced Tactical Radar Correlator (ETRAC) and DOD's Common Synthetic Aperture Radar Processor (CSARP), and provide program management support to the Joint Services Imagery Processing System (JSIPS) Program Office (JPO). The MIES receives and processes imagery from National and tactical sources to generate intelligence reports and exploited imagery products to the field commander. The CSARP processes the signals from Synthetic Aperture Radars (SAR). The ETRAC contains the DoD CSARP and is a C-130 drive on/off system that receives inputs from various platforms, converts the SAR to a visual image, and is capable of stand alone contingency operations. The project in this PE supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore correctly placed in Budget Activity 5.

Project D662 Tactical Surveillance System Engineering and Manufacturing Development: These systems will provide direct operational access to National and theater imagery in near-real-time to provide critical, deep target intelligence support to tactical commanders and to support contingency missions and low intensity conflicts. TENCAP Common Baseline (Cmn Bsln) addresses common subsystems, planned improvements, key activities and ongoing planned initiatives determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the DARPA (PE 0305154D)). Graphic Situation Display (GSD), which is part of the Common Baseline effort, is a jointly funded program to develop a means to computer generate, transmit, and display graphical representations to the battle space thereby saving communication bandwidth, manpower and time. The beta software portion of GSD development effort was funded in FY 93 with Military Exploitation of Reconnaissance and Intelligence Technology (MERIT) funds. This PE also provides technical and engineering support efforts to MIES and ETRAC from the Topographic Engineering Center (TEC), Federally Funded Research And Development Centers (FFRDC), and Contractor Systems Engineering and Technology Assistance (SETA) activity. In FY 95, all funds directly related to the development of MIES, ETRAC and JPO support are moved to PE #0305154D, DARPA. In a parallel action, the support efforts remaining in this PE were consolidated under Project D909 beginning in FY 96. Further details may be found in the Tactical Intelligence and Related Activities (TIARA) Congressional Justification Book, Volume II, and the TENCAP Master Plan.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604740A Tactical Surveillance System - Engineering Development (TIARA)	D662	
FY 1994 Accomplishments:			
<ul style="list-style-type: none">• Completed second MIES and integrated into existing Imagery Exploitation System (IES) at USAREUR. (100)• Upgraded all MIESs with 168 giga bytes of memory (7 full days of on-line storage). (4226)• Integrated GSD into all MIESs. (679)• Upgraded all MIES with National/tactical fiber optics interfaces for real-time connectivity with TRAC/ETRAC. (2427)• Initiated development of 3rd MIES to replace defielded Imagery Processing and Dissemination System (IPDS). (4763)• Continued joint support within JSIPS program. (6800)• Continued hardware development for integration of ETRAC and DoD CSARP. (16331)• Continued Contractor Systems and Engineering Technology Assistance (SETA) to TENCAP program from FFRDC (Aerospace). (397)• Continued SETA to TENCAP program from TEC. (480)• Continued Contractor SETA to TENCAP program. (1331)			
FY 1995 Planned Program:			
<ul style="list-style-type: none">• Initiate installation of GSD into all Forward Area Support Terminal (FAST) systems. (759)• Continue SETA to TENCAP program from FFRDC (Aerospace). (551)• Continue Contractor SETA to TENCAP program. (739)• Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (44)			
FY 1996 Planned Program:			
<ul style="list-style-type: none">• All efforts in this project transferred/consolidated under PE 0604766A (Project D909), Tactical Exploitation of National Space Capabilities Program (TENCAP) - Engineering Development, Project D909, Tactical Electronic Surveillance System, Engineering Development.			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604740A Tactical Surveillance System -
Engineering Development (TIARA)

D662

B. Program Change Summary

Previous President's Budget

Appropriated Value

Adjustments to Appropriated Value

a. SBIR/STTR Decrement (-600)

b. Reprogrammed out of PE (-600)

FY 1994

38734

38734

-1200

FY 1995

2121

2093

FY 1996

1158

FY 1997

1086

Current Budget Submit/President's Budget

37534

2093

0

0

Change Summary Explanation:

Project D662 - Tactical Surveillance System - Engineering Development

Funding: IN FY 96, THE ARMY CONSOLIDATED THE REMAINING PE's SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATIONAL CAPABILITIES (TENCAP) PROGRAM. PE 0604740A/PROJECT 662 WAS CONSOLIDATED WITH PE 0604766A/PROJECT D909 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION, PE 0603730A/PROJECT D560 WAS CONSOLIDATED WITH PE 0603766A/PROJECT D907 IN FY 96 AND BEYOND. These PE's/Projects were consolidated because in FY 95 all funds directly related to the development of IES and ETRAC and support to the JSIPS Program that were funded under Project D560 and D662 in FY94 were moved to OSD PE 0305154D, DARP. Even though the funds have been moved to the Defense Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding to support these DARO efforts (ASPO salaries and expenses, TEC, FFRDC, Contractor SETA, and certain studies) remain in this PE and are still required.

Schedule: None

Technical: None

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604740A Tactical Surveillance System -
Engineering Development (TIARA)

PROJECT

D662

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, A Budget Activity 4										
PE 0603766A Project D907										
TENCAP-Adv Dev										
PE 0603730A Project D560										
Tact Surv Sys - Adv Dev										
RDTE, A Budget Activity 5										
PE 0604766A Project D909										
TENCAP - Eng Dev										
RDTE, D Budget Activity 7										
PE 0305154D Project D531										
DARP										
Other Procurement, Army, OPA-2										
BZ 7315 TENCAP										
BA 0329 DARP										
Procurement, Defense Wide										
0305154D, DARP										

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
Complete Development 2nd MIES and				
Integrate into existing IES				
Initiate Development of 3rd MIES				
Complete Development and Field 3rd				
MIES				

See Project Army D909 and OSD PE 0305154D, Project P531 for Milestones in FY 95 - FY 97.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development		0604740A Tactical Surveillance System - Engineering Development (TIARA)		February 1995	
A. <u>Project Cost Breakdown</u>					
System Development:		FY 1994	FY 1995	FY 1996	FY 1997
Common Baseline (*2)		679	759	See Proj D909	See Proj D909
MIES (*1)		11516	(*1)		
ETRAC (*1)		16331	(*1)		
Subtotal System Development		28526	759		
Program Management:					
FFRDC (*2)		397	551	See Proj D909	See Proj D909
System Engineering (Contractor)(*1, *2, *3)		8131	783	"	"
System Engineering (Government) (*2)		480	0	"	"
Subtotal Program Management (*1, *2, *3, *4)		9008	1334	"	"
Total		37534	2093	0	0
(*1) In FY 95, all development efforts for these systems moved to PE 0305154D (Defense Airborne Reconnaissance Program (DARP), Project P531					
(*2) In FY 96 and beyond, this PE/Project is consolidated under PE 0604766A (TENCAP - Eng Dev), Project D909 (Tactical Electronic Surveillance System - Eng Dev).					
(*3) In FY 95, \$6.8M of this line funds Army's share of support to JPO to support the ongoing JSIPS Program. This effort moved to PE 0305154D (DARP), Project P531 in FY 95.					
(*4) In FY 95, these funds support the system being developed under PE 0305154D (DARP), P531.					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE	February 1995	PROJECT					
BUDGET ACTIVITY		PE NUMBER AND TITLE												
5 - Engineering And Manufacturing Development		0604740A Tactical Surveillance System - Engineering Development (TIARA)							D662					
<u>B. Budget Acquisition History and Planning Information</u>														
Performing Organizations														
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	EAC	Project Office	EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program	
Product Development Organizations														
TEC (MIES)	MIPR	4Q94		N/A	N/A	N/A	N/A	11516	*	*	*	*	*	
Classified ETRAC	MIPR	3Q93		N/A	N/A	N/A	10365	13444	*	*	*	*	*	
Classified (CmnBln)	MIPR	2Q95		N/A	N/A	N/A	0	679	759	*	*	*	*	
Support and Management Organizations														
ESC (JSIPS Sys Eng Cont)	MIPR	2Q-4Q94		N/A	N/A	N/A	N/A	6800	*	*	*	*	*	
Classified (Sys Eng Cont)	MIPR	1Q EA FY		N/A	N/A	N/A	N/A	1331	783	**	**	**	**	
SSD/FDEA (FFRDC)	MIPR	1Q EA FY		N/A	N/A	N/A	N/A	397	551	**	**	**	**	
TEC (Sys Eng Cont)	MIPR	1Q EA FY		N/A	N/A	N/A	N/A	480	0	**	**	**	**	
Test and Evaluation Organizations														
None														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995	PROJECT			
BUDGET ACTIVITY					PE NUMBER AND TITLE					
5 - Engineering And Manufacturing Development					0604740A Tactical Surveillance System - Engineering Development (TIARA)					
Government Furnished Property										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property										
Modularized Interoperable Surface Terminal (MIST) (ETRAC)	MIPR	2Q93	2Q96	3416	2887	*	*	*		
Support and Management Property										
None										
Test and Evaluation Property										
None										
Subtotal Product Development					FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Support and Management					N/A	25639	759	**	**	
Subtotal Test and Evaluation					N/A	9008	1334	**	**	
Subtotal Government Furnished Property					N/A	0	0	**	**	
Total Project					3416	2887	*	*	*	
* See PE 0305154D, P531					N/A	37534	2093			
** See PE 0604766A, D909										

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DATE February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604741A Air Def Cmd, Cntl & Intel-Engr Dev

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	17526	28136	22030	21143	15338	2044	6894	7981	Continuing	Continuing
D126 FAAD Command and Control Engineering Development	17526	28002	21035	21143	15338	2044	6894	7981	111902	655100
D146 Air Defense Tactical Operations Center	0	0	965	0	0	0	0	0	Continuing	Continuing
D2JT FAAD C2 Operational Test	0	134	0	0	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command, Control and Intelligence (FAAD C2I) System provides critical forward area air defense automated information to support the command and control decision process at various levels of command. The mission is to collect, digitally process and disseminate target information, air threat warning, and command and control information to all FAAD weapons (AVENGER, Bradley STINGER Fighting Vehicle (BSFV), Manportable Air Defense System (MANPADS), and combined arms). Unique FAAD C2I software will provide the mission capability by integrating FAAD C2 engagement operations software using Common Hardware/Software (CHS), Standard Integrated Command Post System (SICPS), Enhanced Position Location Reporting System (EPLRS), Joint Tactical Information Distribution System (JTIDS), Single Channel Ground and Air Radio System (SINCGARS), Light and Special Division Interim Sensor (LSDIS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Ground Based Sensor (GBS), and the Army Battle Command System (ABCS) architecture. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project D126 - FAAD Command and Control Eng Dev: The Forward Air Defense Command and Control (FAAD C2) System is an automated system deployed with FAAD weapons to provide accurate and timely command, control and targeting information for the weapon systems. The system utilizes non-developmental item sensors, computers, displays and interface hardware integrated with data communication equipment. It automates mission related functions and uses the Single Channel Ground and Airborne Radio Systems (SINCGARS) for voice and the Army Data Distribution System (ADDS) for data.

FY 1994 Program Accomplishments

- Continued Block II Software Development (12786)
- Conducted Block II Development Test (2440)
- Awarded Block III Development Contract (300)
- ATCCS III Testing Support (2000)

FY 1995 Planned Program

- Conducted Block II IOTE (6808)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		0604741A Air Def Cmd, Cntl & Intel-Engr Dev	
<ul style="list-style-type: none">Continue Block III Software Development (17433)Prepare for Milestone III Decision Review -- Heavy Division (650)Prepare for First Unit Equipped -- Heavy Division (600)Congressionally Directed Sensor Study (2000)Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (511)			
FY 1996 Planned Program			
<ul style="list-style-type: none">Continue Block III Software Development (19606)Prepare for Block III Users Test (800)Prepare for Technology Insertion (629)			
FY 1997 Planned Program			
<ul style="list-style-type: none">Conduct Block III Users Test (UT) (2000)Continue Block III Software Development (18339)Prepare for Block III Development Test (DT) (804)			
<p>Project D2JT - Forward Area Air Defense Command and Control Operational Test: This project finances the direct costs of planning and conducting operational testing and evaluation of the Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) by the Operational Test and Evaluation Command (OPTEC). The FAAD C2I is an Acquisition Category (ACAT) ID system with a dedicated Initial Operational Test and Evaluation (IOTE) in FY 1995 in support of Milestone III full production decisions. Operational testing is conducted under conditions, as close as possible, to those encountered in combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2JT is not a new start. It is restructured from PE 0605712, Support of Operational Testing, Project D001, OPTEC IOTE. In FY 1995 funding for operational testing of ACAT I systems is programmed with the PE funding for each system. Future fiscal years will be reprogrammed when system information becomes available.</p>			
FY 1994 Program: Program unfunded in FY 1994			
FY 1995 Planned Program			
<ul style="list-style-type: none">Construct FAAD C2I IOTE (131)SBIR/STTR (3)			
FY 1996 Planned Program: Program unfunded in FY 1996			
FY 1997 Planned Program: Program unfunded in FY 1997			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
BUDGET ACTIVITY		February 1995		
PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604741A Air Def Cmd, Cntl & Intel-Engr Dev		
<p>Project D146 - Air Defense Tactical Operations Center: Air Defense Artillery (ADA) requires a standardized, integrated, automated command post (CP) and fire direction center (FDC) capability that will fully interoperate with all US Army and Joint C31 and Air Defense systems, and selected systems of allied nations. These capabilities will be incorporated in an Air Defense Tactical Operations Center (ADTOC). The ADTOC must incorporate air defense and theater missile defense force operations and engagement operations functions into a single command, control, communications and intelligence system. Project D146 finances the direct costs of developing an ADTOC that will be used to provide a single system command, control, communications, and intelligence system that will support the requirements of any air defense weapon system at any echelon of Corps and below. This is not a new start. These efforts were previously funded under Project D126.</p>				
FY 1994 Program: Program unfunded in FY 1994				
FY 1995 Planned Program: Program unfunded in FY 1995				
FY 1996 Planned Program				
• Development and integration studies (995)				
FY 1997 Planned Program: Program unfunded in FY 1997				
<p>B. Program Change Summary</p> <p>Previous President's Budget</p> <p>Appropriated Value</p> <p>Adjustments to Appropriated Value</p> <p>a. SBIR/STTR decrement (-184)</p> <p>b. HQDA reprogramming (+2300)</p> <p>Current President's Budget</p>				
	FY 1994	FY 1995	FY 1996	FY 1997
	15410	26494	22056	21139
	15410	28136		
	+2116			
	17526	28136	22030	21143
Change Summary Explanation:				
Project D126:				
Funding: FY94 reprogramming to enable Development Test (DT) to remain on schedule and to cover OPTEC requirement in FY94. \$1M restructured to D146 in FY 96 to finance direct costs of developing an ADTOC. FY 95 (+2M) added for Congressionally directed Sensor Study.				
Schedule: None				
Technical: None				
Project D146:				
Funding: \$1M restructured into this project in FY 96 to finance direct costs of developing an ADTOC.				
Schedule: None				
Technical: None				

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604741A Air Def Cmd, Cntl & Intel-Engr Dev

PROJECT

D126

	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D126	FAAD Command and Control Engineering Development	17526	28002	21035	21143	15338	2044	8994	7981	111902	855100

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To Compl</u>	<u>Total Cost</u>
RDTE, DE10 - FAAD GBS	16661	5900								22561
OPA 2, WK5053 - FAAD GBS	7900	63855	44678	53282	46776	44438	64327	69010	CONT	CONT
OPA 2, AD5050 - FAAD C2	13300	14150	32942	38236	16811	12628	0	0	0	128067
Spares (BA9702/MA9702/BS9702)	1473	1447	1520	1425	1677	933			0	8475
Spares (BS9732)			2634	4040	5672	5868				18214

D. Schedule Profile

	FY 1994		FY 1995		FY 1996		FY 1997	
1	2	3	4	1	2	3	4	1
Conduct Block II Development Test								
Initiate Block III Software Development			X*					
Conduct Block II IOT&E			X*					
Milestone III Decision for Heavy Divisions								
Complete Block II Software Development								
First Unit Equipped Initial -- Heavy Division								
Conduct Block III Users Test								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT
5 - Engineering An.J Manufacturing Development	0604741A Air Def Cmd, Cntl & Intel-Engr Dev						D126
A. Project Cost Breakdown							
	FY 1994	FY 1995	FY 1996	FY 1997			
Major Contract	9528	17500	16500	15000			
Support Contract	775	1000	1000	1000			
PMO/In-house/Other	2883	2694	3335	3143			
GFE/Testing	4340	6808	200	2000			
Total	17526	*28002	21035	21143			
* SBIR/STTR (511).							
B. Budget Acquisition History and Planning Information							
Performing Organizations							
Contractor or Government	Method/Type	Award or Obligation Date	Performing Activity	EAC	Project Office EAC	Total Prior to FY 1994	
Vehicle							
Product Development Organizations							
TRW	C/CPIF	Sep 86	178000	176233	178000	176233	176461
TRW	SS/CPIF	Aug 92	50106	15806	50106	15806	31906
TRW	SS/CPIF	Sep 94	53194	0	53194	0	CONT
TRW	SS/T&M	Sep 93	4900	0	4900	0	CONT
Matrix (RDEC)	MIPR	TBD					CONT
Sensor Study	TBD						2000
Support and Management Organizations							
SETA, CAS	SS/CPFF	Feb 91	9400	9099	9400	9099	CONT
SETA, TBD	C/CPFF						CONT
In-House/ Other							CONT
Test and Evaluation Organizations							
ADATD, Ft Bliss							CONT
OPTEC							2000

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604741A Air Def Cmd, Cntl & Intel-Engr Dev									
Government Furnished Property											
Contract											
Item	Method/Type or Funding	Award or Obligation	Delivery								
Description	Vehicle	Date	Date								
Product Development Property											
CHS	MIPR										
JTIDS	MIPR	1988									
Support and Management Property: None											
Test and Evaluation Property: None											
Total				Prior to	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development					198039	10860	18731	18600	16800	CONT	CONT
Subtotal Support and Management					9099	2226	2663	2435	2343	CONT	CONT
Subtotal Test and Evaluation						4440	6608		2000	CONT	CONT
Total Project					207138	17526	*28002	21035	21143	CONT	CONT
*SBIR/STTR (511).											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995			
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT			
5 - Engineering And Manufacturing Development		0604741A Air Def Cmd, Cntl & Intel-Engr Dev								D146			
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D146 Air Defense Tactical Operations Center		0	0	0	985	0	0	0	0	0	Continuing		
C. <u>Other Program Funding Summary</u> Not Applicable													
D. <u>Schedule Profile</u>													
ADTOC Development		1	2	3	4	1	2	3	4	1	2	3	4

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY			PE NUMBER AND TITLE				DATE	PROJECT	
5 - Engineering And Manufacturing Development			0604741A Air Def Cmd, Cntl & Intel-Engr Dev					February 1995 D146	
A. Project Cost Breakdown									
Development Efforts			FY 1994	FY 1995	FY 1996	FY 1997			
Total					995 995				
B. Budget Acquisition History and Planning Information									
Performing Organizations									
Contractor or	Method/Type	Award or	Performing	Project	Total				
Government	or Funding	Obligation	Activity	Office	Prior to				
Performing	Vehicle	Date	EAC	EAC	FY 1994	FY 1995	FY 1996	FY 1997	Budget to
Activity									Complete
Product Development Organizations									
TBD									
Support and Management Organizations: None									
Test and Evaluation Organizations: None									
Government Furnished Property: None									
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project					995		995		CONT
								</	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604741A Air Def Cmd, Cntl & Intel-Engr Dev								D2JT	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
D2JT FAAD C2 Operational Test	0	134	0	0	0	0	0	0	Continuing	Continuing	

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To
RDTE, A 0604820 Radar Development -		4951							Cost
FAADC3I Oper Test - D2JT									4951

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
1	2	3	4	1	2	3	4	1	2
				X*					3
									4

FAADC2 IOTE

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604741A Air Def Cmd, Cntl & Intel-Engr Dev				D2JT
A. Project Cost Breakdown						
Testing						
Total						
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	Budget to Complete
Product Development Organizations: N/A						
Support and Management Organizations: N/A						
Test and Evaluation Organizations						
OPTEC						
Government Furnished Property: None						
Subtotal Product Development						
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604746A Automatic Test Equipment

Development

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19926	15512	5437	2878	2848	2818	3747	3741	Continuing	Continuing
DL10 Electro-Optic (EO) Test Equipment	1302	4740	0	0	0	0	0	0	0	24702
DL59 Diagnostic/Expert System Development	13478	7892	5437	2878	2848	2818	3747	3741	Continuing	Continuing
D537 Integrated Family of Test Equipment	5146	2880	0	0	0	0	0	0	0	86312

A. Mission Description and Budget Item Justification

This program element provides for development of modular, reconfigurable Automatic Test Equipment (ATE) to satisfy test and fault isolation requirements across equipment commodities and to meet operational readiness needs of sophisticated systems and state-of-the-art technologies. An urgent requirement exists at all levels of maintenance for ATE to support complex communications and electronics-intensive commodities such as missiles, aircraft, and combat vehicles. The Integrated Family of Test Equipment (IFTE), with improvements as required to keep pace with technologies employed in the supported weapons systems, can meet these mission requirements into the next century. This program element further provides for identification and evaluation of the capabilities of nondevelopmental items (NDI) to satisfy requirements for manual and semi-automatic general purpose test, measurement, and diagnostic equipment (TMDE) at the division level. Expert systems and artificial intelligence applications are also being developed under this program element to provide paperless maintenance manuals/procedures and battlefield electronic displays which will reduce the Army's investment in test program sets (TPS) and in maintenance publications and procedures. These projects are appropriately assigned to Budget Activity 5 since they provide for engineering and manufacturing development of new ATE systems to meet the test and diagnostic requirements of the Army's weapons systems and for incorporation of state-of-the-art technologies into the Army's ATE systems.

Project DL10 - Electro-Optic Test Equipment: This project provides for development of state-of-the-art, technologically superior general purpose test equipment capable of performing fault isolation and failure diagnosis on electro-optical components and assemblies of the Army's major weapons systems. Currently, electro-optic (EO) testing requirements in the forward areas are met with a multitude of non-standard, semi-automatic or manual testers which vary greatly in capability, reliability, weight, and cost, and require very highly skilled operators and maintainers. Serious deficiencies exist in EO testing capabilities in the field. There is no automatic EO testing capability at organizational and direct support levels for certain weapons systems and critical parameters of other systems cannot be measured at the organizational levels because EO test equipment is not available. The test equipment being developed under this project will fill these voids in the field and replace outdated, deficient, and difficult to maintain equipment such as the Land Combat Support System (LCSS). This new equipment will alleviate the existing EO test and diagnostic shortfalls and is in concert with Army and DOD policy on standard ATE. Program has been restructured and continuing effort is funded under Project DL59 beginning in FY 1996.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Continued development of and acquisition support functions for Contact Test Set-EO Augmentation (CTS-EOA) (929) Performed design analysis of EO test facility (EOTF) in shelter and van configuration (166) Procured interactive electronic technical manual and calibration equipment for EOA (145) Commenced preparation of cost and operational effectiveness analysis (COEA) for EO test equipment (62) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Evaluate/validate off-system EO test requirements and solutions (663) Convert LCSS EO TPSs for use on Base Shop Test Facility (BSTF) (3800) Close out CTS-EOA development and complete preparation of COEA (200) Small Business Innovation Research/Small Business Technology Transfer (STTR) (77) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> See Project DL59. <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> See Project DL59. <p>Project DL59 - Diagnostic/Expert System Development: This project supports full-scale development of expert/diagnostic systems and general purpose test equipment and evaluation/testing of nondevelopmental items (NDI) equipment for support of Army's weapons systems. These systems and equipment are required to overcome existing deficiencies and voids in organic test and diagnostic capabilities. The project provides for development of diagnostic technologies and state-of-the-art general purpose test equipment to support the Army's weapons systems; improvement of general purpose test equipment to meet new testing and technological requirements; market surveys of commercially available general purpose test equipment to determine applicability to Army requirements; evaluations and validations of diagnostic software on targeted hardware; and development/evaluation of test programs sets (TPS) for use with standard ATE. Applications of state-of-the-art technologies in expert systems and artificial intelligence, paperless maintenance and troubleshooting manuals, electro-optics displays for battlefield use, and soldier-friendly equipment will be developed to meet identified requirements.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Developed, tested, and implemented additional diagnostic data capability and developed of test capability to meet new air quality standards (2576) • Commenced development of TPSs for the Kiowa Warrior Mast Mounted Sight and Control Display System (2000) • Commenced development of depot and factory level TPSs and on-system diagnostic enhancements for the Longbow Apache (7000) • Converted Army Depot Automatic Diagnostic System TPSs for use on Integrated Family of Test Equipment (IFTE) (146) • Developed TPSs for Ground Based Sensor (801) • Converted LCSS electronic TPSs for use on Base Shop Test Facility (BSTF) (955) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Complete development of TPSs for Kiowa Warrior Mast Mounted Sight and Control Display System (4438) • Complete development of selected depot and factory level TPSs and on-system diagnostic enhancements for the Longbow Apache (3288) • Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) (166) <p>FY 1996 Plann Program</p> <ul style="list-style-type: none"> • Test new Contact Test Set (CTS) hardware (1800) • Test software for compatibility with new CTS (700) • Commence development of software tools for new CTS (628) • Perform bench testing of NDI equipment (380) • Perform initial integration of Virtual Memory Extension Bus for Instrumentation (VXI) into IFTE (1409) • Test commercial equipment for satisfaction of IFTE capability requirements (520) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Complete development of software tools for new CTS (340) • Test commercial instrumentation in CTS chassis (618) • Test new state-of-the-art commercial equipment for use in Army TMDE programs (390) • Test IFTE VXI integration for TPS compatibility (930) • Evaluate down-sized test equipment for field use (600) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
February 1995		
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604746A Automatic Test Equipment Development	
<p>Project D537 - Integrated Family of Test Equipment (IFTE): This project provides for development and upgrade of ATE that provides automated testing of electronics-intensive weapons systems at all maintenance levels. IFTE will automatically test and verify the operation of line replaceable units and screen shop replaceable units. Its pre-planned product improvement program upgrades both the software and the hardware. The hardware upgrade will be for inclusion of the latest commercially available VXI technology as well as upgrades in the digital and radio frequency areas to support new weapons systems. Program has been restructured and continuing effort is funded under Project DL59 beginning in FY 1996.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Commenced computer system upgrade for the BSTF (1825) • Commenced development of display replacement for the BSTF (660) • Commenced software tool development (1122) • Evaluated continuous acquisition and life cycle support and audio/video implementation (261) • Acquired line replaceable units and TPSs for use in verification of test equipment operability (1278) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Evaluate VXI and develop a method for VXI implementation into IFTE (751) • Complete development and test computer system and display upgrades for the BSTF (1225) • Complete development and implement new software tools (355) • Perform base shop test facility TPS acceptance testing (500) • Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)(49) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • See Project DL59. <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • See Project DL59. 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604746A Automatic Test Equipment Development	
<u>B. Program Change Summary</u>		
Previous President's Budget	FY 1994	FY 1997
Appropriated Value	23453	5739
	23453	
Adjustments to Appropriated Value (Total PE)		
b. SBIR/STTR (-327)		
b. Reprogrammed Out of PE (-3200)		
Current President's Budget Submit	19926	2878

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604746A Automatic Test Equipment Development								DL10	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL10 Electro-Optic (EO) Test Equipment		1302	4740	0	0	0	0	0	0	0	24702
C. Other Program Funding Summary											
OPA2 Appropriation		FY 1994		FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Total Cost
Integrated Family of Test Equipment (KA4100)				3897	6241						Cont'd Cont'd
D. Schedule Profile											
Complete Design Analysis of EOTF		FY 1994			FY 1995			FY 1996		FY 1997	
Revise CTS-EOA Schedules		1	2	3	4	1	2	3	4	1	2
Complete COEA				X*							3
Complete CTS-EOA Developmental Testing					X*						4
IETM Delivery											
Preproduction Hardware Delivery											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PROJECT		
5 - Engineering And Manufacturing Development	DL10		
	PE NUMBER AND TITLE		
	0604746A Automatic Test Equipment Development		

<u>A. Project Cost Breakdown</u>	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Primary Hardware Development/Support	506	200		
Development Support Equipment Acquisition	28			
Systems Engineering	224	588		
Software Development/Engineering	105	3800		
Technical Data	115			
Integrated Logistic Support	114	75		
Product Assurance	48			
Test Planning/Preparation	100			
Miscellaneous	62	77		
Total	1302	4740		

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
To be selected	C/CPIF	31Mar95	3800	3800			3800				3800
Pentastar Electronics, Inc Huntsville, AL	C/FFP	FY92- FY94	10487	10487	10487						10487
Gov't In-House					3208	918	663				4789
SBIR/STTR							77				77

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604746A Automatic Test Equipment Development									
Contractor or Government Performing Activity	Contract Method/Type o. Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Other Contracts					4965	384	200				5549
Government Furnished Property None.											
Subtotal Product Development					Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Support and Management					18660	1302	4740				24702
Subtotal Test and Evaluation											
Total Project					18660	1302	4740				24702

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604746A Automatic Test Equipment Development

PROJECT

DL59

COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL59	Diagnostic/Expert System Development	13478	7892	5437	2878	2849	2816	3747	3741	Continuing	Continuing

C. Other Program Funding Summary

**OPA2 Appropriation
Integrated Family of Test Equipment
(K18400/K51600)**

D. Schedule Profile

Not Applicable

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To Compl</u>	<u>Total Cost</u>
57835	58370	20208	20067	15714	16104	68368	68377	Cont'd	Cont'd

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604746A Automatic Test Equipment Development									DL59
A. Project Cost Breakdown											
		FY 1994	FY 1995	FY 1996	FY 1997						
	System Engineering	2579		3944	2373						
	Software Development	8890	7726	1328	340						
	Development Support Equipment Acquisition	1984									
	Miscellaneous	25	166	165	165						
	Total	13478	7892	5437	2878						
B. Budget Acquisition History and Planning Information											
Performing Organizations											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
McDonnell Douglas Corp., Huntington Beach, CA	SS/FFP	Aug94/ Apr95	4100	4100		2000	2100				4100
Honeywell, Inc Albuquerque, NM	SS/FFP	Apr95	4760	4760	2337		2338		85		4760
McDonnell Douglas Corp., Mesa, AZ	SS/CPIF	Sep94	5400	5400		5400					5400

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY					DATE		PROJECT		
5 - Engineering And Manufacturing Development					February 1995		DL59		
PE NUMBER AND TITLE									
0604746A Automatic Test Equipment Development									
Contractor or Government Performing Activity					Total Prior to FY 1994				
Contract Method/Type or Funding Vehicle					FY 1994				
Award or Obligation Date					FY 1995				
Performing Activity					FY 1996				
Project Office					FY 1997				
EAC					Budget to Complete				
3288					Total Program				
McDonnell Douglas Corp., Mesa, AZ					3288				
Gov't In-House					6525				
SBIR/STTR					1018				
Other Contracts					1625				
Government Furnished Property					1500				
					Cont'd				
					166				
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995																				
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT																					
5 - Engineering And Manufacturing Development		0604746A Automatic Test Equipment Development								D537																					
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost																				
D537	Integrated Family of Test Equipment	5146	2680	0	0	0	0	0	0	0	66312																				
<p>C. Other Program Funding Summary</p> <p>OPA2 Appropriation Integrated Family of Test Equipment (K18400/K51600)</p> <table> <tr> <td>FY 1994</td> <td>FY 1995</td> <td>FY 1996</td> <td>FY 1997</td> <td>FY 1998</td> <td>FY 1999</td> <td>FY 2000</td> <td>FY 2001</td> <td>To Compl</td> <td>Total Cost</td> </tr> <tr> <td>57835</td> <td>58370</td> <td>20208</td> <td>20067</td> <td>15714</td> <td>16104</td> <td>68368</td> <td>68377</td> <td>Cont'd</td> <td>Cont'd</td> </tr> </table> <p>D. Schedule Profile</p> <p>Not Applicable</p>												FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost	57835	58370	20208	20067	15714	16104	68368	68377	Cont'd	Cont'd
FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost																						
57835	58370	20208	20067	15714	16104	68368	68377	Cont'd	Cont'd																						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604746A Automatic Test Equipment Development				
A. Project Cost Breakdown				FY 1994	FY 1995	FY 1996
Primary Hardware Development/Engineering Changes				1025	1509	FY 1997
Development Support Equipment Acquisition				1278	15	
Systems Engineering				376	507	
Software Development				1122	50	
Testing				325	700	
Technical Data				470		
Miscellaneous				550	99	
Total				5146	2880	
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete FY 1997
Product Development Organizations						
SAIC San Diego, CA	C/CPAF	May/Jul/ Dec94	1122	1122		1122
Northrop Grunman, Bethpage, NY	SS/FFP	Jun/Dec94 Apr95	2509	2509	500	2509
Grunman Aerospace, Corp Bethpage, NY	Various	Various	52792	52792	52792	52792

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

February 1995

PE NUMBER AND TITLE

0604746A Automatic Test Equipment

Development

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604760A Distributive Interactive Simulations - Engineering Development								DC81	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC81 Reconfigurable Simulator Engineering Development		0	6412		0	0	0	0	0	0	6412
<p>A. Mission Description and Budget Item Justification: This program element (PE) provides for engineering development of reconfigurable simulators. Project DC81 is focused on development of engineering techniques and equipment for reconfigurable simulators. Emphasis is placed on development of engineering prototypes for various configurations of reconfigurable simulators. Prototypes will be evaluated by the Army's Battle Laboratories, and both software and hardware modules will be verified, validated, and accredited. Work done on this program will have benefit across the Army and DoD by providing standards for interoperability and software reuse in this emerging domain. This project in this Program Element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore correctly placed in Budget Activity 5.</p> <p>Project DC81 - Reconfigurable Simulators Engineering Development: This project initiates engineering development of both software and hardware for reconfigurable simulators for use in TRADOC Battle Labs. Simulators developed in this program are not system specific, but will represent generic equipment (tanks, aircraft, etc.). Reconfigurable simulators will be used to simulate existing and developmental equipment to explore new concepts and systems for technology insertion, and for the development of doctrine necessary to mesh new equipment items into training and battle situations. FY 95 efforts will include development of a first-generation rotary wing aircraft simulator, a generic armored vehicle simulator reconfigurable to any weapons and performance criteria, a fire support simulator for both artillery and air defense systems, and a combat service support module.</p> <p>FY 1994 Accomplishments: Unfunded in FY 1994</p> <p>FY 1995 Planned Program</p> <ul style="list-style-type: none"> • Develop engineering techniques, drawings, and specification for design and fabrication of reconfigurable simulators (1160) • Build prototype reconfigurable simulators with various designs for evaluation in Battle Labs (4678) • Conduct verification, validation, and accreditation of software and hardware reconfigurable simulator modules (440) • SBIR/STTR (134) <p>FY 1996 Planned Program</p> <ul style="list-style-type: none"> • Program continues as part of PE 0604715A - Project DC91, Distributive Interactive Simulation <p>FY 1997 Planned Program</p> <ul style="list-style-type: none"> • Program continues as part of PE 0604715A - Project DC91, Distributive Interactive Simulation 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development		
0604760A Distributive Interactive Simulations - Engineering Development		
<u>B. Program Change Summary</u>		
Previous President's Budget Appropriated Value	FY 1994	FY 1995
Adjustments to Appropriated Value		8041
Current Budget Estimate Submission (BES)		6412
<u>C. Other Program Funding Summary</u>		
RDTE, A Budget Activity 3	FY 1994	FY 1995
PE 0604715A Project DC91, Distributive Interactive Simulation	0	3445
RDTE, A Budget Activity 4,	FY 1994	FY 1995
PE 0603760A, Distributive Interactive Simulations	0	8385
	FY 1994	FY 1995
	0	6139
	FY 1996	FY 1997
	11328	3745
	FY 1998	FY 1999
	0	6992
	FY 2000	FY 2001
	17063	14053
	To	Total
	0	8385
<u>D. Schedule Profile:</u> The efforts funded in this project are non-system specific and represent continuing advanced development in the area of Reconfigurable Simulators; therefore, no milestones are provided.		
Request for Proposal release	FY 1994	FY 1995
Contract Award	1	2
Software/Hardware Integration	3	4
	4	1
	3	2
	4	3
	X	X
	X	X

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)									
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		47470	28065	24699	15302	19012	22016	28577	28533	Continuing	Continuing
D113	Joint Tactical Ground Station	21014	8851	0	0	0	0	0	0	0	28885
D809	Tactical Electronic Surveillance System - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28533	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification. This Program Element (PE) supports the engineering development directed at meeting the tactical commanders intelligence mission requirements for contingency force deployment and deep battle surveillance and targeting - as stated in Field Manual 100-5. Specific Signals Intelligence (SIGINT) and multi-spectral developments are managed within the Army's Tactical Exploitation of National Capabilities (TENCAP) program. The scope of the program is directed towards advanced techniques and capabilities to exploit National and selected theater capabilities that uniquely meet stated Army tactical intelligence and targeting needs and deficiencies for near-real-time receipt, analysis, and dissemination to the appropriate tactical echelon. Further details may be found in the Tactical Intelligence and Related Activities (TIARA), Congressional Justification Book, Volume II and the TENCAP Master Plan. The projects in this PE support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.</p> <p>Project D113 Joint Tactical Ground Station (JTGS): This project initiates development of two Engineering and Manufacturing Development (EMD) JTGS units. The project is a follow-on to the Tactical Surveillance Demonstration (TSD) and Tactical Surveillance Demonstration Enhancement (TSDE) programs (Project D909). JTGS is designed for in-theater receipt, processing and dissemination of warning and alerting data from Defense Support Program (DSP) sensors and follow-on space based sensors of major tactical events such as missile launches. JTGS supports active defense, attack operations, and passive defense. By being located in-theater, the system improves the warning and alerting response time and eliminates several single-point-failure susceptible communications relay nodes. The warning and cueing information gathered will be disseminated via Tactical Information Broadcast System (TIBS), Tactical Related Application (TRAP) and other existing in-theater communications nets.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Completed developmental and phase I operational testing of transportable TSDE unit. (470) Prepared for and conducted Milestone (MS) II decision review. (720) Developed EMD JTGS ruggedization specifications. (1331) Awarded EMD contract for two JTGS EMD units. (18493) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Develop and deliver two JTAGS EMD units. (6897) • Initiate developmental and operational testing of EMD units. (1081) • Initiate preparation for MS III decision review. (687) • Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (186) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Project completed in FY 96. Effort moves to Procurement (BZ8410). <p>Project D909 Tactical Exploitation of National Systems (TENCAP) Engineering Development: This project supports the engineering development/enhancement of the Electronic Tactical User Terminal (ETUT), Mobile Integrated Tactical Terminal (MITT) (replaces the Tactical High Mobility Terminal (THMT)), Forward Area Support Terminal (FAST), Electronic Processing Dissemination System (EPDS) and Tactical Exploitation System (TES). The Army's emerging TES will incorporate the standards and protocols dictated by the Common Imagery Ground Surface System (CIGSS) program. TES brings all of the existing and emerging Army TENCAP capabilities (EPDS, MIES, and ETRAC) into an integrated common baseline; downsized, modular and scaleable to meet a wide range of contingency requirements. TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program (DARP) (PE 0305154D)). Graphic Situation Display (GSD) is a jointly funded program to develop a means to computer generate, transmit, and display graphical representations of the battle space thereby saving communicating bandwidth, manpower and time. The beta software portion of the GSD effort was funded with FY 93 Military Exploitation of Reconnaissance and Intelligence Technology (MERIT) funds.</p> <p>FY 1994 Planned Program:</p> <ul style="list-style-type: none"> • Continued software upgrades and enhancements for the refinement of the TENCAP Common Baseline (including work done to modify Synthesized UHF Computer controlled Electronic Sub-System (SUCCESS) Radios to DAMA) to fully exploit National capabilities to meet emerging worldwide contingency scenarios. (14201) • Initiated the engineering development of five additional MITTs to replace the existing THMTs. (6200) • Continued to retrofit of ETUTs with MITT hardware and software (based on an open architecture baseline). (5149) • Continued support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace), Army Research Laboratory (ARL) support, U.S. Army Space Program Office (ASPO) support and Contractor System Engineering and Technology Assistance (SETA) support. (906) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities to meet emerging worldwide contingency scenarios which includes major upgrade to communications component which is common to all TENCAP systems SUCCESS Radio. (9749) Continue engineering development of five additional MITTs to replace existing THMT. (1500) Continue the retrofit of ETUTs with enhanced MITT hardware and software. (1330) Initiate effort to upgrade ETUT to include EPDS capabilities, which will allow for the defelding of the EPDS systems in FY 7. (4270) Continue support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support and Contractor SETA support. (1962) Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (403) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities such as integration of communications capabilities to meet changing architectures and implementation of software appliqué to provide the operational commander with enhanced battlefield intelligence products. (11114) Complete the retrofit of ETUTs with enhanced MITT hardware and software. (2000) Complete effort to upgrade ETUT to include EPDS capabilities. (5800) Complete building/fielding of five additional MITTs. (1000) Initiate engineering development of the TES. (1614) Continue support to TENCAP Program management and administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support, SETA support, and U.S. Army Topographic Engineering Center (TEC). (3171) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities such as integration of communications capabilities to meet changing architectures and implementation of software appliqué to provide the operational commander with enhanced battlefield intelligence products. (7008) Continue engineering development of the TES. (4800) Continue support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace) and Contractor SETA support. (3494) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	February 1995	
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1995
Appropriated Value	52279	28475
Adjustments to Appropriated Value	52279	28065
a. SBIR/STTR decrement (-810)	-4809	0
b. Reprogrammed out of PE (-3999)		
Current Budget Submit/President's Budget	47470	28065
		FY 1996
		23664
		0
		0
		FY 1997
		14291
		0
		0
		15302
Change Summary Explanation (by Project):		
Project D909, Tactical Electronics Surveillance System - Engineering Development		
<p>Funding: IN FY 96, THE ARMY CONSOLIDATED THE REMAINING PEs SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATIONAL CAPABILITIES (TENCAP) PROGRAM. ALL EFFORTS FUNDED UNDER PE 0604740A/PROJECT D662 WERE CONSOLIDATED WITH PE 0604766A/PROJECT D909 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION, PE 0603730A/PROJECT D560 WAS CONSOLIDATED WITH PE 0603766A/PROJECT D907 IN FY 96 AND BEYOND. These PEs/Projects were consolidated because in FY 95 all funds directly related to the development of MIES and ETRAC and support to JSIPS program that were funded in Project D560 and D662 in FY94 were moved to OSD PE 0305154D, DARP. Even though the funds have been moved to the Defense Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding to support these DARO efforts (ASPO salaries and expenses, TEC, FFRDC, Contractor SETA, and certain studies) remained in this project and are still required. Therefore the increase to this PE in FY 96 and FY 97 is the result of consolidating the DARO support efforts that were previously funded under project D560 with project.</p>		
Schedule: None		
Technical: None		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									PROJECT
5 - Engineering And Manufacturing Development		0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)									D113
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D113 Joint Tactical Ground Station		21014	8851	0	0	0	0	0	0	0	29865
C. Other Program Funding Summary											
Other Procurement Army, OPA-2											
BZ 8410 Joint Tactical Ground Station (JTAGS)		0	0	30914	0	0	0	0	0	0	30914
D. Schedule Profile											
Milestone II IPR											
EMD Contract Award											
Technical Review Complete											
Del 1st EMD Prototype											
Developmental Test Begin											
Del 2nd EMD Prototype											
Operational Tests Begin											
Milestone III IPR											
*Completed											
FY 1994		2	3	4	2	3	4	1	2	3	4
FY 1995											
FY 1996											
FY 1997											
FY 1998											
FY 1999											
FY 2000											
FY 2001											
Total											
Cost											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE _____

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)

PROJECT

D113

A. Project Cost Breakdown

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Prime Contractor	14195	2894	0	0
Contract Engr Support	3313	2070	0	0
Program Management Support	1549	1708	0	0
Government Engineering Support	984	2055	0	0
Government Furnished Equipment	973	124	0	0
Total	21014	8851	0	0

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Aerojet (Prime)	C/CPFF	8 Jul 94	16441	16968	0	13934	2894	0	0	0	16828
Aerojet (TSDE)						261	0	0	0	0	261
Support and Management Organizations											
Proj Mgt/Matrix	N/A	N/A	N/A	N/A	0	1743	2475	0	0	0	4218
SETA	C/CPIF	2 Oct 90	N/A	N/A	0	2064	1369	0	0	0	3433
Contract Eng Spt			N/A	N/A	0	1249	701	0	0	0	1950
Test and Evaluation Organizations											
WSMR					0	405	888	0	0	0	1293
OTEA/Other					0	385	400	0	0	0	785

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DATE	RDTE&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)
February 1995	

BUDGET ACTIVITY		PE NUMBER AND TITLE						
5 - Engineering And Manufacturing Development		0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)						
Government Furnished Property								
Item	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
Product Development Property								
Radios, Comms, (Generator, etc.)	Various	2Q94 - 2Q95	4Q94-3Q95	0	973	124	0	0
Support and Management Property								
None								
Test and Evaluation Property								
None								
Subtotal Product Development				Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
Subtotal Support and Management					14195	2894		
Subtotal Test and Evaluation					5056	4545		
Subtotal Government Furnished Property					790	1288		
Total					973	124		
					21014	8851		
Subtotal Product Development				Total Program				
Subtotal Support and Management					17089			
Subtotal Test and Evaluation					9601			
Subtotal Government Furnished Property					2078			
Total					1097			
					29865			
Subtotal Product Development				Budget to Complete				
Subtotal Support and Management								
Subtotal Test and Evaluation								
Subtotal Government Furnished Property								
Total								

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)

PROJECT

D909

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D909 Tactical Electronic Surveillance System - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28533	Continuing	Continuing

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, A Budget Activity 4 PE 0603730A Project D560 Tact Surv Sys - Adv Dev	15140	11717	0	0	0	0	0	0	N/A	N/A
PE 0603766A Project D907 TENCAP-Adv Dev	15069	14815	28693	26913	23935	28057	29377	34319	Cont	Cont
RDTE, A Budget Activity 5 PE 0604740A Project D662 Tact Surv Sys - Eng Dev	37334	2093	0	0	0	0	0	0	N/A	N/A
RDTE, D Budget Activity 7 PE 0305154D Project P531 DARP	0	40017	33833	37216	12390	6328	6328	6328	Cont	Cont
Other Procurement Army, OPA-2 BZ7315 TENCAP BA0329 DARP	7729 1927	4636 2411	4617 0	1807 0	1784 0	1853 0	4971 0	14916 0	Cont Cont	Cont Cont
Procurement, Defense Wide PE 0305154D	0	0	88700	123400	77900	69100	71400	73300	Cont	Cont

D. Schedule Profile

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY		DATE		PROJECT					
5 - Engineering And Manufacturing Development		February 1995		D909					
PE NUMBER AND TITLE		FY 1995		FY 1996		FY 1997			
0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)		1	2	3	4	1	2	3	4
Completed and Fielded Initial six MITTs			X						
Awarded Contract of five Additional MITTs					X				
Completed Eng Dev and Field FASTs									
Initiate upgrade to ETUT with EPDS Functionality				X					
Completed Dev and Fielded five Additional MITTs							X		
Completed Retrofit and Refield ETUTs							X		
Complete and Field DAMA Appliqué into SUCCESS Radios								X	
Initiate Engineering Development of TES Install GSD in FAST Systems							X		

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RTD&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)			DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
5 - Engineering And Manufacturing Development	0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	D909		
A. Project Cost Breakdown D909				
System Development:		FY 1994	FY 1995	FY 1996
MITT		6200	1500	1000
ETUT		5149	5600	7800
TES		0	0	1614
Common Baseline (*1)		14201	9749	11114
Subtotal System Development		25550	16849	21528
Program Management:				
FFRDC (*2)		426	995	1323
System Engineering (Contractor) (*2)		480	1370	1848
Subtotal Program Support (*2)		906	2365	3171
Total		26456	19214	24699
(*1) TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the DARP (PE 0305154D)).				
(*2) In FY 96 and beyond, the support efforts previously funded under PE 0604740A, Project D662 (which support efforts developed under PE 0305154 (DARP)) are consolidated into this project.				

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RUT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE _____

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604766A Tactical Exploitation of National

Capabilities (TENCAP) - Engineering Development (TIARA)

PROJECT

D909

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total			
					Prior to FY 1994	FY 1994	FY 1995	FY 1996

Product Development Organizations

Model	4Q94	N/A	N/A	6200	1500	1000	0
MIPR	4Q94	N/A	N/A	N/A	N/A	1000	0
MIPR	2Q94	N/A	N/A	5149	5600	7800	0
MIPR	N/A	N/A	N/A	12931	9179	11039	6933

Support and Management Organizations

Program	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035	FY 2036	FY 2037	FY 2038	FY 2039	FY 2040	FY 2041	FY 2042	FY 2043	FY 2044	FY 2045	FY 2046	FY 2047	FY 2048	FY 2049	FY 2050	FY 2051	FY 2052	FY 2053	FY 2054	FY 2055	FY 2056	FY 2057	FY 2058	FY 2059	FY 2060	FY 2061	FY 2062	FY 2063	FY 2064	FY 2065	FY 2066	FY 2067	FY 2068	FY 2069	FY 2070	FY 2071	FY 2072	FY 2073	FY 2074	FY 2075	FY 2076	FY 2077	FY 2078	FY 2079	FY 2080	FY 2081	FY 2082	FY 2083	FY 2084	FY 2085	FY 2086	FY 2087	FY 2088	FY 2089	FY 2090	FY 2091	FY 2092	FY 2093	FY 2094	FY 2095	FY 2096	FY 2097	FY 2098	FY 2099	FY 2100	FY 2101	FY 2102	FY 2103	FY 2104	FY 2105	FY 2106	FY 2107	FY 2108	FY 2109	FY 2110	FY 2111	FY 2112	FY 2113	FY 2114	FY 2115	FY 2116	FY 2117	FY 2118	FY 2119	FY 2120	FY 2121	FY 2122	FY 2123	FY 2124	FY 2125	FY 2126	FY 2127	FY 2128	FY 2129	FY 2130	FY 2131	FY 2132	FY 2133	FY 2134	FY 2135	FY 2136	FY 2137	FY 2138	FY 2139	FY 2140	FY 2141	FY 2142	FY 2143	FY 2144	FY 2145	FY 2146	FY 2147	FY 2148	FY 2149	FY 2150	FY 2151	FY 2152	FY 2153	FY 2154	FY 2155	FY 2156	FY 2157	FY 2158	FY 2159	FY 2160	FY 2161	FY 2162	FY 2163	FY 2164	FY 2165	FY 2166	FY 2167	FY 2168	FY 2169	FY 2170	FY 2171	FY 2172	FY 2173	FY 2174	FY 2175	FY 2176	FY 2177	FY 2178	FY 2179	FY 2180	FY 2181	FY 2182	FY 2183	FY 2184	FY 2185	FY 2186	FY 2187	FY 2188	FY 2189	FY 2190	FY 2191	FY 2192	FY 2193	FY 2194	FY 2195	FY 2196	FY 2197	FY 2198	FY 2199	FY 2200	FY 2201	FY 2202	FY 2203	FY 2204	FY 2205	FY 2206	FY 2207	FY 2208	FY 2209	FY 2210	FY 2211	FY 2212	FY 2213	FY 2214	FY 2215	FY 2216	FY 2217	FY 2218	FY 2219	FY 2220	FY 2221	FY 2222	FY 2223	FY 2224	FY 2225	FY 2226	FY 2227	FY 2228	FY 2229	FY 2230	FY 2231	FY 2232	FY 2233	FY 2234	FY 2235	FY 2236	FY 2237	FY 2238	FY 2239	FY 2240	FY 2241	FY 2242	FY 2243	FY 2244	FY 2245	FY 2246	FY 2247	FY 2248	FY 2249	FY 2250	FY 2251	FY 2252	FY 2253	FY 2254	FY 2255	FY 2256	FY 2257	FY 2258	FY 2259	FY 2260	FY 2261	FY 2262	FY 2263	FY 2264	FY 2265	FY 2266	FY 2267	FY 2268	FY 2269	FY 2270	FY 2271	FY 2272	FY 2273	FY 2274	FY 2275	FY 2276	FY 2277	FY 2278	FY 2279	FY 2280	FY 2281	FY 2282	FY 2283	FY 2284	FY 2285	FY 2286	FY 2287	FY 2288	FY 2289	FY 2290	FY 2291	FY 2292	FY 2293	FY 2294	FY 2295	FY 2296	FY 2297	FY 2298	FY 2299	FY 2300	FY 2301	FY 2302	FY 2303	FY 2304	FY 2305	FY 2306	FY 2307	FY 2308	FY 2309	FY 2310	FY 2311	FY 2312	FY 2313	FY 2314	FY 2315	FY 2316	FY 2317	FY 2318	FY 2319	FY 2320	FY 2321	FY 2322	FY 2323	FY 2324	FY 2325	FY 2326	FY 2327	FY 2328	FY 2329	FY 2330	FY 2331	FY 2332	FY 2333	FY 2334	FY 2335	FY 2336	FY 2337	FY 2338	FY 2339</
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Test and Evaluation Organizations

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RTD&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995	PROJECT			
BUDGET ACTIVITY		PE NUMBER AND TITLE			D909					
5 - Engineering And Manufacturing Development		0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)								
Government Furnished Property										
Item Description	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
ROTERMs/ CHARIOTs (Cmun Bsin)	MIPR	3Q94	3Q95	N/A	1200	500	0	0		
Support and Management Property										
Test and Evaluation Property										
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Subtotal Government Furnished Property										
Total Program										
				Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
				N/A	24280	16279	21453	11733		
				N/A	906	2365	3171	3494		
				N/A	70	70	75	75		
				N/A	1200	500	0	0		
				N/A	26456	19214	24699	15302		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604768A Brilliant Anti-Armor Submunition									
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	121884	117528	193303	185974	184102	139786	152388	108777	7405	1726358	
D641 BAT	121884	92287	98028	71525	24947	0	0	0	0	924884	
D687 BAT P3I	0	15275	37138	34742	63336	63041	77439	36314	0	327283	
D688 ATACMS BLK II	0	9884	58840	77916	77704	41653	0	0	0	264077	
D686 ATACMS BLK IIA	0	0	0	0	11847	31111	74949	72463	7405	197775	
D2NT BAT OPERATIONAL TEST	0	0	299	1791	6268	3681	0	0	0	12339	

A. Mission Description and Budget Item Justification: The BAT system supports the Army's deep fires doctrine that calls for the destruction and disruption of threat forces and long range weapons at ranges in excess of 100 kilometers before they can influence the maneuver battle. In the past, the only options have been to engage these targets with attack helicopters or fixed wing aircraft. While effective, these options place critical resources and their air crews at risk. The BAT system significantly reduces this risk through its autonomous acquisition and terminal guidance capabilities to attack well defended armored forces behind enemy lines. The BAT system includes the BAT submunition, a pre-planned product improvement (P3I) BAT submunition, the Army Tactical Missile System Block II (ATACMS BLK II) missile, and the ATACMS BLK IIA missile. BAT is a dual-sensor (acoustic and infrared) submunition that autonomously seeks out and destroys moving armored vehicles without human interaction. It is an unpowered, aerodynamically stable vehicle, approximately 36 inches long, 5.5 inches in diameter and weighs 44 pounds. BAT submunitions are carried deep into enemy territory by the two Army TACMS variants, then dispensed over a large target array to selectively attack and destroy individual targets. The BAT P3I program will improve the sensor and warhead subassemblies to increase lethality and to enable the BAT submunition to attack cold, stationary, armored targets and other targets of high value. The ATACMS BLK II missile is a version of the currently fielded and combat-proven Army TACMS Block I missile and is designed to carry 13 BAT submunitions. The ATACMS BLK IIA missile is an extended range version of the ATACMS BLK II missile and will carry 6 BAT P3I submunitions out to ranges in excess of 200 kilometers. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project D641-BAT: The BAT submunition is an unpowered, aerodynamically stable vehicle approximately 36 inches long, 5.5 inches in diameter, and weighs 44 pounds. The BAT is an acoustic and infrared terminally guided submunition that searches for, tracks, and destroys armored, mobile targets. BAT submunitions are carried deep into enemy territory by variants of the Army Tactical Missile System (ATACMS), then dispensed over numerous high-payoff targets to selectively attack and destroy individual targets. By utilizing acoustic technology, BAT has the advantage of a large footprint which allows it to compensate for target location errors. Being a certified round, the BAT submunition has a low sustainment cost.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604768A Brilliant Anti-Armor Submunition	February 1995
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted EMD Program (1111994) • Conducted Carrier Integration Activities and other studies (4000) • Conducted Test Range and Target Operation, Maintenance and Improvements (5900) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct EMD Program (55695) • Conduct Carrier Integration Activities and other studies (25884) • Conduct Test Range and Target Operation, Maintenance and Improvements (8800) • SBIR/STTR decrement(1908) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Conduct EMD Program (71139) • Conduct Carrier Integration Activities and other studies (19089) • Conduct Test Range and Target Operation, Maintenance and Improvements (8800) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Conduct EMD Program (58988) • Conduct Carrier Integration Activities and other studies (5458) • Conduct Test Range and Target Operation, Maintenance and Improvements (7079) <p>Project D687-BAT P3I: The BAT P3I submunition maintains the BAT length, diameter, and weight configurations. The BAT P3I is a multi-sensored, terminally guided submunition that searches for, tracks, and destroys specific targets including mobile armored combat vehicles, cold stationary armor combat vehicles, Surface-to-Surface Missile (SSM) Transporter Erector Launchers (TELs), and Heavy Multiple Rocket Launchers (MRL). BAT P3I submunitions are carried deep into enemy territory by variants of the Army Tactical Missile System (ATACMS), then dispensed over numerous high-payoff targets to selectively attack and destroy individual targets. BAT P3I is intended to increase submunition lethality and expand the target arrays to be attacked. Being a certified round, the BAT P3I submunition has a low sustainment cost. This program will incorporate new seeker, warhead, and microprocessor technologies into the current BAT configuration while maintaining the current BAT form, fit design and maximum commonality of BAT components. This program includes studies/demonstrations pertaining to technology advancements, alternate carriers, identification friend or foe, and acoustic/infrared/millimeter wave characterization of expanded target sets.</p> <p>FY 1994 Accomplishments: No Planned Program</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development		
PE NUMBER AND TITLE		0604768A Brilliant Anti-Armor Submunition
FY 1995 Planned Program:		
<ul style="list-style-type: none"> Conduct P3I DEM/VAL Phase II program (13232) Conduct P3I warhead development (1697) Test Range Activities (25) SBIR/STTR decrement(321) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> Conduct P3I DEM/VAL Phase II program (33174) Conduct P3I warhead development (2162) Test Range Activities (1800) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Conduct P3I DEM/VAL Phase II program (30069) Conduct P3I warhead development (1773) Test Range Activities (2900) 		
<p>Project D688-Army Tactical Missile System Block II: The Army Tactical Missile System Block II (ATACMS BLK II) will be a ground launched, solid propellant, inertially guided (GPS aided) missile system with 13 BATs or P3I BATs as its payload. The mission of the ATACMS BLK II is to delay, disrupt, neutralize, or destroy armored combat vehicles and other postulated high-payoff targets. Once the BAT P3I submunition is incorporated into the ATACMS BLK II, these targets will include cold stationary armored combat vehicles, mobile armored combat vehicles, heavy multiple rocket launchers and missile transporter/launchers. ATACMS BLK II will carry and dispense BAT and BAT P3I submunitions deep in enemy territory where these submunitions will autonomously track and destroy numerous high-payoff targets. Global Positioning System (GPS) technology will increase accuracy in flight, reducing target location errors. ATACMS BLK II will be launched from the M270 launcher.</p>		
FY 1994 Accomplishments: No Planned Program		
FY 1995 Planned Program:		
<ul style="list-style-type: none"> DA IPR (Mar 95) (1000) Complete Preliminary Design Support (DAAH01-94-C-S036) (3050) Restraint and Static Testing (PDS) (205) CD Contract Award (May 95) (5500) SBIR/STTR decrement (209) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604768A Brilliant Anti-Armor Submunition		
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Conduct Continued Development (55440) Conduct Static and Sled Tests (800) Conduct Range Planning and Activities to Accommodate BLACK II Flight Tests (600) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Conduct CD Program (60737) Conduct PPT Flight Test Program (16369) Conduct activities to support JPSD and future improvement programs (810) <p>Project D686-Army Tactical Missile System Block IIA: The Army Tactical Missile System Block IIA (ATACMS BLK IIA) is the extended range version of the ATACMS BLK II missile. It is a ground launched, solid propellant, inertially guided missile system with 6 Pre-Planned Product Improvement (P3I) BATs as its payload. The mission of the ATACMS BLK IIA is to delay, disrupt, neutralize, or destroy moving armored combat vehicles, cold stationary targets, dug-in targets, Surface-to-Surface Missile (SSM) Transporter and Erector Launcher (TELS), and other high value targets at ranges in excess of 200 kilometers. Global Positioning System (GPS) technology will increase accuracy in flight, reducing target location errors. The ATACMS Block IIA missile will be launched from the M270 launcher.</p> <p>FY 1994 Accomplishments: No Planned Program</p> <p>FY 1995 Planned Program: No Planned Program</p> <p>FY 1996 Planned Program: No Planned Program</p> <p>FY 1997 Planned Program: No Planned Program</p> <p>Project D2NT-OPTEC: Project D2NT finances the direct costs of planning and conducting operational testing and evaluation of the BAT submunition by the Operational Test and Evaluation Command (OPTEC). The BAT submunition is an Acquisition Category (ACAT) I system with a dedicated Initial Operational Test and Evaluation in FY 1998 in support of a Low Rate Initial Production (LRIP) decision. Operational testing is conducted under conditions, as similar as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides the Army leadership with an independent test and evaluation of both the effectiveness and suitability of the system. Project D2NT is not a new start. It is reprogrammed from OE 0605712, Support of Operational Testing, Project D001, OPTEC Initial Operational and Evaluation (IOTE).</p> <p>FY 1994 Accomplishments: No Planned Program</p>			

February 1995

RD T&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604768A Brilliant Anti-Armor Submunition

FY 1995 Planned Program: No Planned Program

FY 1996 Planned Program:

- IOTE planning and preparation (299)

FY 1997 Planned Program:

- IOTE planning and preparation (1791)

B. Program Change Summary

Previous President's Budget

Appropriated Value

Adjustments to Appropriated Value (Total PE)

- a. SBIR/STTR Decrement (-1832)
b. Reprogrammed to PE (3999)

Current President's Budget Submit

FY 1994
119727
119727
2167

FY 1995
109011
117526

FY 1996
136501

FY 1997
106794

Change Summary Explanation

- In order to properly fund and support the integrated ATACMS/BAT program, the FY 96 RDT&E funding for project D685 (BAT Carrier) was transferred from PE 23802 (Other Missile PIP), and placed in PE 64768 (BAT) in project D688 (ATACMS BLK II). The FY 95 funds were transferred by congressional action. The Army has transferred the FY 96 and later years funding streams through the POM process.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604768A Brilliant Anti-Armor Submunition								D641	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1998 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D641	BAT	121894	92287	99028	71525	24947	0	0	0	0	924884
C. Other Program Funding Summary											
Missile Procurement, Army CA 6100 BAT		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
						127425	112232	187512	204623	1160647	1792439
D. Schedule Profile											
EMD Restructure		FY 1994			FY 1995		FY 1996		FY 1997		
1st Prototype Unit Delivered		1 2 3	4	1	2 3	4	1 2	3 4	1 2	3 4	
Complete DVT		X*									
Begin Subsystem Qual						X					
Complete WT/Sled Tests									X		
Complete Subsystem Qual											
Initiate Contractor Drop Test (CDT)						X					
Complete CDT							X				
* Indicates activity is complete											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			D641	
5 - Engineering And Manufacturing Development		0604768A Brilliant Anti-Armor Submunition				
A. Project Cost Breakdown						
Contractor Engr Support	FY 1994	FY 1995	FY 1996	FY 1997		
Developmental Test & Eval	95800	68517	74028	46590		
Program Management Spt	6000	8100	9400	7100		
Program Management Personnel	10552	8297	7858	9706		
Total	9542	7373	7742	8129		
	121894	92287	99028	71525		
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government	Method/Type	Award or Obligation	Performing Activity	Project Office	Total Prior to	
Performing Activity	Vehicle	Date	EAC	EAC	FY 1994	
Product Development Organizations						
Northrop	SS/CPAF/	5 JUN 91	561000	561000	378107	
Grumman Corp	CFFF					
In-House Support	PO	OCT			38366	
Support and Management Organizations						
SETA & Program	SS/CPFF	NOV			45520	
Mgmt Spt						
Misc. OGA	PO	OCT			34732	
Activities						
Test and Evaluation Organizations						
Range Support	PO	OCT			10137	
Other Test	PO	OCT			8341	
Activities						
Government Furnished Property: N/A						
Subtotal Product Development					416473	
Subtotal Support and Management					80252	
Subtotal Test and Evaluation					18478	
Total Project					515203	
					121894	
					92287	
					81770	
					75890	
					54719	
					21951	
					7858	
					9706	
					7100	
					1210	
					50288	
					924884	
					99028	
					24947	
					20622	
					683664	
					74028	
					8129	
					1329	
					825	
					64349	
					3935	
					5771	
					961	
					54102	
					612	
					33418	
					598	
					16870	
					756145	
					118451	
					50288	
					924884	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995			
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT			
5 - Engineering And Manufacturing Development		0604768A Brilliant Anti-Armor Submunition								D687			
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D687	BAT P3I	0	15275	37136	34742	63336	63041	77439	36314	0	327283		
C. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.													
D. Schedule Profile													
Dem Val Phase I		1	2	3	4	1	2	3	4	1	2	3	4
Dem Val Phase II CA		X*											
CFT										X			X
* Indicates activity is complete													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604768A Brilliant Anti-Armor Submunition				D687
A. Project Cost Breakdown						
Contract Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997	
Developmental Test & Evaluation			10074	26718	25183	
Program Management Support			3409	1747	2918	
Program Management Personnel			1792	4198	3645	
Total			15275	4473	2996	
				37136	34742	
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or	Contract					
Government	Method/Type					
Performing	or Funding					
Activity	Vehicle					
Product Development Organizations						
Northrop	SS-CPIF	DEC		10074	26718	214632
Grumman Corp						276607
In-House Support	PO	OCT		1792	4473	13295
Support and Management Organizations						22556
SETA & Prog	SS-CPFF	NOV		985	1162	4410
Mgmt Spt						7741
AMCCOM	PO	OCT		1697	2162	5632
MISC OGA	PO	OCT		727	874	5074
Activities						
Test and Evaluation Organizations						
Range Support	PO	OCT			747	1608
Other Test	PO	OCT			1000	3400
Activities						3773
Government Furnished Property: N/A						5900
Subtotal Product Development				11866	31191	227927
Subtotal Support and Management				3409	4198	28179
Subtotal Test and Evaluation					1747	3645
Total Project				15275	37136	7195
						5008
						9673
						327283
						240130
						299163
						18447
						9673
						327283

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995

DATE _____

BUDGET ACTIVITY

BUDGET ACTIVITY

PE NUMBER AND TITLE

0604768A Brilliant Anti-Armor Submunition

PROJECT

D688

COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D666	ATACMS BLK II	0	9964	56840	77916	77704	41653	0	0	0	264077

C. Other Program Funding Summary

Missile Procurement, Army
CA 6105 ATACMS BLK II

D. Schedule Profile

Static Test
Sled Test
Engr Flight Test
CDR
DA IPR

[illegible]

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995		PROJECT
BUDGET ACTIVITY		LINE NUMBER AND TITLE			D688			
5 - Engineering And Manufacturing Development		0604768A Brilliant Anti-Armor Submunition						
A. Project Cost Breakdown								
		<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>			
	Contractor Engr Support		5500	39489	58914			
	Development Test & Eval		205	1400	2695			
	Program Management Spt		1970	9029	10047			
	Program Management Personnel		2289	6922	6260			
	Total		9964	56840	77916			
B. Budget Acquisition History and Planning Information								
Performing Organizations								
Contractor or Government	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996
				EAC	EAC			
Product Development Organizations								
Loral Vought	SS/CPFF	MAY 95	182000	182000				
In-House Support	PO	OCT						
Support and Management Organizations								
SETA & Program	SS/CPFF	OCT						
Mgmt Spt								
Misc OGA	PO	OCT						
Activities								
Test and Evaluation Organizations								
Range Support	PO	OCT						
Other Test	PO	OCT						
Activities								
Government Furnished Property: N/A								
Subtotal Product Development								
Subtotal Support and Management								
Subtotal Test and Evaluation								
Total Project								
						</		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604768A Brilliant Anti-Armor Submunition								D686	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D686 ATACMS BLK IIA		0	0	0	0	11847	31111	74849	72463	7405	197775
<p>C. Other Program Funding Summary</p> <p>Missile Procurement, Army CA 6110 ATACMS BLK IIA (Begins FY 2002)</p> <p>D. Schedule Profile: N/A Funds Begin in FY 1998</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995		
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT			
5 - Engineering And Manufacturing Development		0604768A Brilliant Anti-Armor Submunition								D2NT			
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D2NT BAT OPERATIONAL TEST		0	0	299	1791	6268	3981	0	0	0	12339		
<p>C. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.</p>													
<p>D. Schedule Profile:</p>													
Conduct IOTE Activities		1	2	3	4	1	2	3	4	1	2	3	4

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604770A Joint Surv/Tgt Attack Radar System									
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	29415	39655	18771	7884	7426	6276	4996	14965	Continuing	Continuing	
D202 Army Joint STARS	29415	33723	16990	7884	7426	6276	4996	14965	Continuing	Continuing	
D2CT JSTARS OPERATIONAL TEST	0	5932	1781	0	0	0	0	0	0	7713	

A. Mission Description and Budget Item Justification: This is a Tactical Intelligence and Related Activities (TIARA) program. US Forces have an urgent need for a wide-area surveillance and target attack radar system capable of continuous coverage out to a depth in excess of 100km beyond their Forward Line of Troops. Commanders must have the capability to detect, locate, classify and track moving and stationary targets for situation assessment to avoid surprise and attack targets out to the range of existing and developing weapons. The Joint Surveillance and Target Attack Radar System (JSTARS) provides battle management and targeting of enemy units at critical times and places so commanders can employ their organic forces and firepower in support of deep, close and rear operations. The joint Army/Air Force program objective is to develop a radar, datalink, ground station, and airframe that will provide the capability to locate, track and classify tracked and wheeled vehicles beyond ground line-of-sight during the day and night and under most weather conditions. Radar data is distributed to ground station modules via a secure surveillance and control data link. The Army will develop the ground components of the JSTARS under this PE, project D202. Also included in this PE is project D2CT with FY 95 and FY 96 funding for the Multi-service Operational Test and Evaluation (MOTE). The projects in this program element support research efforts in the Engineering and Manufacturing development phases of the Acquisition Strategy and are therefore correctly placed in Budget Activity 5.

Project D202: The Army will develop the ground components of the JSTARS under this PE/Project. The Ground Station Module (GSM) is being developed in a Block approach. Block I GSMs utilize the same prime mission equipment and will be developed and deployed on different platforms. The Block I Medium GSM (MGSM) is housed in a standard S280 shelter and mounted on a 5 Ton Truck. The rapidly deployable Block I Light GSM (LGSM) is housed in a Standard Integrated Command Post Shelter (SICPS) and mounted on a High Mobility Multi Purpose Wheeled Vehicle (HMMWV). A Block I Heavy GSM (HGSM) prototype was also assembled. This variant integrated the GSM prime mission equipment into a Command and Control Vehicle (C2V) (a Bradley variant). Also included in this project is the development of the Block II GSM now called the Common Ground Station (CGS). The CGS will integrate signal, imagery, and other intelligence processing into a single ground station, resulting in enhanced battle management as well as significant cost savings. These enhancements are being implemented in a phased approach. Significant enhancements by phase include: integration of Secondary Imagery Dissemination (Phase I), full design/test of the tracked vehicle (heavy) variant (Phase II), and integration/interface with other sensor systems (Phase III).

FY 1994 Accomplishments

- Conducted Block I Light Technical Test (TT) (2743)
- Completed LGSM Engineering and Manufacturing Development Model Delivery (14544)
- Completed Block I Light Force Development Test & Evaluation (FDTE) (150)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		0604770A Joint Surv/Tgt Attack Radar System	
<ul style="list-style-type: none"> Completed GSM Trainer development and delivery (7750) Completed LGSM software development (4228) 			
FY 1995 Planned Program			
<ul style="list-style-type: none"> Obtain Block I Light LRIP Decision (306) Complete Data Link Mast Head redesign (4313) Release draft CGS Solicitation (4866) Continue LGSM EMD Program (19535) Complete LGSM Software Stress Testing (4012) Small Business Innovative Research (SBIR)/ Small Business Technology Transfer (STTR) program (691) 			
FY 1996 Planned Program			
<ul style="list-style-type: none"> Complete LGSM EMD Program (7878) Obtain Milestone III/IV Decision (275) Initiate Phase I CGS design/system enhancements (8837) 			
FY 1997 Planned Program			
<ul style="list-style-type: none"> Conduct Phase I CGS Critical Design Review (CDR) (1220) Complete CGS Phase I Integration (6089) Complete CGS Phase I Technical /User Assessment (575) 			
<p>Project D2CT: D2CT provides for the Army's costs associated with the MOTE. All MOTE activities will be completed by 2Q96. This Joint Service Initial Operational Test and Evaluation (IOT&E) will support both the US Army and US Air Force in FY 96 Joint STARS Full Scale Production Decision. Project D2CT is not a new start. It is a transfer of effort from PE 0605712, Support of Operational Testing, Project D001 OPTeC Initial Operational Test and Evaluation.</p>			
FY 1994 Accomplishments: Not funded in FY 94			
FY 1995 Planned Program			
<ul style="list-style-type: none"> Conduct MOTE Pre Test Planning and Training (1233) Develop Instrumentation of Test Hardware, Simulators and Facility (906) Conduct MOTE (3668) SBIR/STTR (125) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development	0604770A Joint Surv/Tgt Attack Radar System			
FY 1996 Planned Program				
• Conduct MOTE (881)				
• Complete Test Analysis and Reports (725)				
• Obtain Milestone II/IV Decision (175)				
FY 1997 Planned Program: Not funded in FY 97				
B. Program Change Summary				
Previous President's Budget				
Appropriated Value				
Adjustments to Appropriated Value				
FY94 a. SBIR Decrement (-390)				
b. Reprogrammed into PE (3850)				
Current Budget Submit/President's Budget				
		FY 1994	FY 1995	FY 1996
		25955	40186	21849
		25955	39655	
		3460		
				FY 1997
				25904
		29415	39655	18771
				7884

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 - Engineering And Manufacturing Development										D202	
PE NUMBER AND TITLE										0604770A Joint Surv/Tgt Attack Radar System	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
D202 Army Joint STARS	29415	33723	16990	7884	7426	6276	4996	14965	Continuing	Continuing	
C. Other Program Funding Summary											
BA1080 Joint STARS Army TIARA Funding Qty	FY 1994 57796 7	FY 1995 55239 8	FY 1996 82984 12	FY 1997 89855 12	FY 1998 94326 12	FY 1999 80609 10	FY 2000 86499 10	FY 2001 85516 7	To Compl Cont	Total Cost Cont	
D. Schedule Profile											
Conducted Block I Light Technical Test (TT)	FY 1994 2	3	4	FY 1995 2	3	4	FY 1996 2	3	FY 1997 2	3	4
Completed Block I Light Force Development & Test Evaluation (FDTE)		X*									
LGSM E&MD Model Delivery		X*									
Completed GSM Trainer Development		X*									
Complete LGSM Software Stress Testing		X*									
Release Draft CGS Solicitation			X*								
Obtain Block I Light LRIP Decision				X							
Obtain Milestone III/IV Decision							X				
Initiate Phase I CGS design/system enhancements											
Conduct CGS Phase I CDR									X		
Complete CGS Phase I											
Technical/User Assessment											X

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DATE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)
February 1995	

Exhibit R-3

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604770A Joint Surv/Tgt Attack Radar System

PROJECT

D2CT

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2' T JSTARS OPERATIONAL TEST	0	5932	1781	0	0	0	0	0	0	7713

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete Cont	Total Cost Cont
BA1080 Joint STARS Army TIARA Funding	57796	55239	82984	89855	94326	80609	86499	85516		
Qty	7	8	12	12	12	10	10	7		

D. Schedule Profile

	FY 1994		FY 1995		FY 1996		FY 1997	
MOTE Pre Test Planning and Training	1	2	3	4	1	2	3	4
MOTE				X				
Milestone II/IV Decision						X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT	
5 - Engineering And Manufacturing Development		0604770A Joint Surv/Tgt Attack Radar System				D2CT	
A. Project Cost Breakdown							
Operational Test and Evaluation		FY 1994	FY 1995	FY 1996	FY 1997		
SBIR/STTR		0	5807	1781	0		
Total		0	125	0	0		
		0	5932	1781	0		
B. Budget Acquisition History and Planning Information							
Performing Organizations							
Contractor or Government	Method/Type	Award or Obligation Date	Performing Activity	EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete
Vehicle							
Product Development Organizations: N/A							
Support and Management Organizations							
SBIR/STTR							
Test and Evaluation Organizations							
OPTEC	MIPR	Dec 94	7588	7588	0	0	0
Government Furnished Property: N/A							
Subtotal Product Development							
Subtotal Support and Management							
Subtotal Test and Evaluation							
Total Project							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE
BUDGET ACTIVITY										February 1995
PE NUMBER AND TITLE										
5 - Engineering And Manufacturing Development										
0604778A Positioning System Development										
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	4455	3797	460	449	450	440	0	0	0	18208
D163 Modular Azimuth and Positioning System (MAPS) Hybrid Product Improvement Program (PIP)	3988	3332	0	0	0	0	0	0	0	15477
D168 NAVSTAR Global Positioning System (GPS) Equipment	467	465	460	449	450	440	0	0	0	2731

A. Mission Description and Budget Item Justification

Project D163 provides for Engineering and Manufacturing Development (EMD) of a Hybrid Modular Azimuth and Positioning System (MAPS) into one host system, the Paladin (M109A6 155mm Self-Propelled Howitzer). The MAPS will be integrated with a Global Positioning System (GPS) receiver to provide rapid initialization and frequent updates of the inertial positioning and orientation system without need of a local survey control and will limit inertial Position/Navigation (POS/NAV) errors. Project D168 provides for Army participation in the research and development phases of Army weapon systems requiring POS/NAV capabilities. It provides for the engineering development of several alternatives for integration of GPS receivers into selected systems. These alternatives include, but are not limited to Embedded/Integrated GPS, Advanced GPS Receivers (AGR), Tactical GPS Anti-Jam Technology (TGAT) and Differential GPS. The projects in this program element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project D163 -MAPS Hybrid PIP: Maps Hybrid PIP is a product improvement of MAPS. The project is intended to improve the autonomous capability of Paladin and other potential users by decreasing their reliance on externally provided survey control points and , thus, increasing system effectiveness and survivability on the battlefield.

FY 1994 Accomplishments:

- Researched and developed alternatives related to system integration and application technology (\$2000)
- Reviewed documentation and interface with host systems (\$431)
- Participated in studies, prototyping and integration of candidate systems (\$835)
- Supported test and evaluations of GPS integration (\$722)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604778A Positioning System Development		
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Continued Test and Evaluation (1536) Production and Field Retrofit Planning (670) Type Classification of MAPS Hybrid Unit (1059) Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR) (67) <p>Project D168- (NAVSTAR GPS) GPS sets were used in Operation Desert Storm and proved to be a significant force multiplier. GPS assures greater command and control and significantly reduces the likelihood of fratricide. New uses for GPS are being developed. These new uses require an analysis of the overall host vehicle operational POS/NAV system to support development of alternative GPS applications</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Researched and developed alternatives related to system integration of GPS in selected weapon systems (293). Reviewed documentation and interface with host systems (74). Developed and tested GPS anti-jam, differential and embedded applications (100). <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Continue development/testing of GPS anti-jam, differential and embedded technologies (100). Incorporation of new GPS technology into next generation user equipment through insertion of P31 (256). Testing of prototype equipment (100). SBIR/STTR (9) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Procurement and testing of items in marketplace to remain current with NDI alternatives (to include embedding) (\$173). Advanced GPS receiver framework conceptualization (non-hardware work) to meet evolving user requirements (\$171). Air receiver exploration for MAGR follow-on replacement (\$116). <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Improved accuracy and time to fix studies for follow-on equipment requirements (125). Test program for NDI aviation GPS receiver (MAGR follow-on/replacement) (154). Improved survivability of GPS capability (renewed antijam/antispoof and other threats response) (170). 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		
5 - Engineering And Manufacturing Development		
PE NUMBER AND TITLE		
0604778A Positioning System Development		
<u>B. Program Change Summary</u>		
Previous President's Budget	FY 1994	FY 1997
Appropriated Value	4888	451
Adjustments to Appropriated Value	4888	0
a. SBIR & STTR decrease (\$74)	-433	0
b. Internal Reprogramming Action (\$359)		
Current Budget Submit/President's Budget	4455	449

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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C. Other Program Funding Summary: There are no other related RDTE or other Appropriation efforts.

D. Schedule Profile:

	FY 1994	FY 1995	FY 1996	FY 1997
1	2 3 X*	1 2 3 4	1 2 3 4	1 2 3 4
Software Design and Review				
Engineering & Development Test	X*			
Quality Test		X		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604778A Positioning System Development	D163	
A. Project Cost Breakdown:			
		FY 1994 2021	FY 1995 1400
Contractor Engineering Support			FY 1996 FY 1997
Government Engineering Support		1367	1250
Developmental Test & Evaluation		600	0
Operational (Qual) Test & Evaluation		0	615
SBIR/STTR			67
Total		3988	3332
B. Budget Acquisition History and Planning Information: N/A			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604778A Positioning System Development								D168	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
NAVSTAR Global Positioning System (GPS) Equipment		467	465	460	449	450	440	0	0	0	2731

C. Other Program Funding Summary: N/AD. Schedule Profile: N/A

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604778A Positioning System Development	D168	
A. <u>Project Cost Breakdown</u>			
	FY 1994	FY 1995	FY 1996
	100	100	0
Developmental Test and Evaluation	185	194	291
Government Engineering Support	182	171	169
Contractor Engineering Support	467	465	460
Total			154
			170
			125
			449
B. <u>Budget Acquisition History and Planning Information:</u> N/A			
C. <u>Funding Profile:</u> N/A			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY										PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development										0604780A Combined Arms Tactical Trainer (CATT)	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	50801	51375	59475	20669	3136	3212	15213	18727	143658	403198	
D571 Close Combat Tactical Trainer (CCTT)	50801	51375	59475	20669	3136	3212	3225	3220	0	233135	
D581 Aviation Combined Arms Tactical Trainer (AVCATT)	0	0	0	0	0	0	5495	7754	52429	64678	
D582 Engineer Combined Arms Tactical Trainer (ENCATT)	0	0	0	0	0	0	3496	3763	58129	65388	
D583 Fire Support Combined Arms Tactical Trainer (FSCATT)	0	0	0	0	0	0	2897	3990	33100	36997	

A. Mission Description and Budget Item Justification: The Combined Arms Tactical Trainer (CATT) is a family of combined arms simulation systems designed to support the Army's simulation-based Combined Arms Training Strategy. The specific systems that comprise CATT include Close Combat Tactical Trainer (CCTT), Aviation Combined Arms Tactical Trainer (AVCATT), Engineer Combined Arms Tactical Trainer (ENCATT), Fire Support Combined Arms Tactical Trainer (FSCATT) and Air Defense Combined Arms Tactical Trainer (ADCATT). CATT enables units, from crew to the Battalion Task Force level, to conduct a wide variety of combat tasks on a realistic, interactive synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms team in a cost effective manner. CATT reinforces the successes and corrects the shortcomings of the Simulator Network (SIMNET) and Aviation Network (AIRNET) demonstration programs executed by the Advanced Research Projects Agency (ARPA). By practicing skills in CATT, units are able to make more effective use of scarce and costly live fire and maneuver exercises as well as train tasks deemed too hazardous to conduct in the field. Fielded in both fixed site and mobile/transportable versions, CATT enables both Active and Reserve component units to prepare for real world contingency missions. Units taking their CATT systems with them on operational deployments, such as peacekeeping missions, are able to sustain essential warfighting skills when not at their home station. By being able to process a wide array of terrain data bases and modify the behavior of the computer generated opposing forces, CATT offers a virtually unlimited array of training options to support the Army's many regional contingency missions. The combination of tough field and live fire training and realistic simulation training in CATT is the catalyst to prepare soldiers and their leaders for the uncertainties they will face in an unpredictable world. The projects in this program element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project D571 - Close Combat Tactical Trainer: This project provides for engineering and manufacturing development (EMD) and pre-planned product improvements for the Close Combat Tactical Trainer (CCTT) which will enhance readiness of both active and reserve component forces. The program will develop a networked system of interactive computer driven simulators, emulators and semi-automated forces that replicate combat vehicles and weapon systems, combat support systems, combat service support systems, and command and control systems to create a fully integrated real-time collective task training environment. This trainer will allow soldiers to

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604780A Combined Arms Tactical Trainer (CATT)	
practice, repetitively, techniques which, if performed on real equipment, would be too hazardous, time-consuming and expensive. These trainers enhance realism and allow soldiers and units to learn tactical combat lessons on maneuver, command and control, and improved teamwork for increased survivability.		
FY94 Accomplishments:		
<ul style="list-style-type: none"> Completed software requirement specification; conducted and completed spiral development of hardware/software builds 1 & 2 (41120) Supported data collection, analysis and dissemination; performed software independent verification and validation; developed life cycle estimates and provided program office support (7154) Provided government program management, engineering, technical and contract support (2527) 		
FY 95 Planned Program:		
<ul style="list-style-type: none"> Conduct and complete spiral development of hardware/software builds 3 through 7 (40531) Support data collection, analysis and dissemination; perform software independent verification and validation; develop life cycle estimates and provide program office support (6292) Provide government program management, engineering, technical and contract support (3473) SBIR/STTR (1079) 		
FY 96 Planned Program:		
<ul style="list-style-type: none"> Produce and deliver a fixed company team site (38 modules) and 2 mobile platoon sets (11 modules); perform software/hardware physical configuration audit; conduct Preproduction Qualification Test (PPQT) for both fixed and mobile systems and prepare for fixed and mobile Initial Operational Test and Evaluation (IOT&E) (50838) Maintain support services to the program office (6327) Provide government program management, engineering, technical and contract support (2310) 		
FY 97 Planned Program:		
<ul style="list-style-type: none"> Conduct and support IOT&E and prepare for pre-planned product improvements (14706) Maintain support services to the program office (3853) Provide government program management, engineering, technical and contract support (2110) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604780A Combined Arms Tactical Trainer (CATT)		
B. Program Change Summary			
Previous President's Budget		FY 1994	FY 1997
Appropriated Value		52921	41771
Adjustments to Appropriated Value		52921	10772
a. SBIR/STTR Decrement (-820)		-2120	
b. Reprogramming Total (-1300)			
Current Budget Estimate Submission (BES)		50801	59475
		51375	20669

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 - Engineering And Manufacturing Development										0604780A Combined Arms Tactical Trainer (CATT) D571	
PE NUMBER AND TITLE											
	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
D571 Close Combat Tactical Trainer (CCTT)	50801	51375	58475	20669	3136	3212	3225	3220	0	233135	
C. Other Program Funding Summary											
OPA3, Appropriation										To	Total
NA0170 SIMNET/CCTT	0	31808	30655	88520	98509	103682	27091	15830	0	Compl	Cost
Military Construction, A Appropriation	7500	0	10500	17600	20000	0	0	0	0		402095
Operation and Maintenance, A Appropriation	0	0	415	5009	7537	13190	13190	13190	Cont'd		55600
D. Schedule Profile											
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997		
1	2	3	4	1	2	3	4	1	2	3	4
Spiral Build 1											
Spiral Build 2											
Spiral Build 3											
Spiral Build 4											
Spiral Build 5											
Spiral Build 6											
Spiral Build 7											
Hardware PDR											
Software PDR											
Hardware CDR											
Software CDR											
CSCI											
FQT/QS Fielding Decision											
PPQT Fixed Site											
PPQT Mobile											
IOTE/Milestone IIIA											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604780A Combined Arms Tactical Trainer (CATT)								D571	
A. Project Cost Breakdown											
		FY 1994	FY 1995	FY 1996	FY 1997						
		12328	12151	15242	4409						
	Hardware Design and Manufacturing	13430	13238	16604	4803						
	Software Design and Manufacturing	882	870	1091	316						
	Hardware/Software Integration	821	810	1016	294						
	System Test and Evaluation	13120	12932	16221	4692						
	Contractor Program Management/System Engineering	538	530	665	192						
	Contractor Other Support	2527	3473	2310	2110						
	Program Office/Technical Support	3978	2367	3590	2280						
	Government Agency Support	3177	3925	2736	1573						
	Support Contracts		1079								
	SBIR/STTR										
	Total	50801	51375	59475	20669						
B. Budget Acquisition History and Planning Information											
Performing Organizations											
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Loral FSC	C-CPAF/T&M/FFP	Nov 92	178320	178320	31125	41120	40531	50838	14706	0	178320
Support and Management Organizations											
NAWC-TSD	MIPR	Dec 92	11566	11566	1146	2527	3473	2310	2110	0	11566
RCI	T&M	Feb 93	3687	3687	2914	773	0	0	0	0	3687
CECOM	MIPR	Nov 93	7893	7893	0	2056	1294	2490	2053	0	7893
MICOM	MIPR	Jan 94	1020	1020	0	1020	0	0	0	0	1020
Sherikon	T&M	Oct 94	4400	4400	0	0	1800	1800	800	0	4400
Miscellaneous	Various	Various	25170	25170	2837	3305	3198	2037	1000	12793	25170
SBIR/STTR	N/A	N/A	N/A	N/A	N/A		1079				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604780A Combined Arms Tactical Trainer (CATT)			D571	
Government Furnished Property: Not Applicable						
		Total			Budget to	Total
		Prior to			Complete	Program
		FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
		31125	41120	40531	50838	14706
		6897	9681	10844	8637	5963
						12793
						42022
						233135
	Subtotal Product Development					
	Subtotal Support and Management					
	Subtotal Test and Evaluation					
	Total Project					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604801A Aviation - Engineering Development								DC45	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC45 Aviation Life Support Equipment (ALSE) Engineering Manufacturing Development		8221	4650	5142	6899	7835	7153	2498	2494	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification: This PE provides engineering development to programs associated with Aviation Life Support equipment (ALSE) Project DC45 makes battlefield survivability possible and enhances the aircrew's ability to return to fight again through new protective clothing ensembles, aviator protective masks, laser protective visors, survival kits, restraint systems, integrated flight helmets, and microclimatic cooling devices. The Project in this Program Element supports research efforts in the Engineering Manufacturing Development Phase of the Acquisition Strategy and is correctly placed in Budget Activity 5.</p> <p>Project DC45-Aviation Life Support Equipment (ALSE)-Engineering Development: This project provides engineering development for those systems and items of equipment which are unique and necessary for the sustainment and enhanced survivability of Army aircrews and passengers on the future integrated battlefield and during related training activities. Engineering development programs will focus on air vehicle integration, airworthiness qualification and user evaluation of multiple technologies to improve aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety, and survivability. These programs include: advanced laser protection against emerging new threat systems; product improvements to existing helmets to improve performance and increase commonality; microclimatic cooling to improve aircrew performance and endurance in harsh environments and while encumbered with NBC protective equipment; development and adaptation of automotive airbag technology to the APACHE aircraft to improve crash protection and enhanced aircrew survivability; and follow-on air vehicle integration and test of Air Warrior program effort to enhance and maximize aircrew performance in force modernized aircraft. Maximum advantage will be taken of simulation to reduce program technical risk through early user evaluation and to reduce program design and test cost and schedules. Both joint and service independent efforts will be pursued under the scope of this project.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Completed EMD for Inflatable Body and Head Restraint System (IBAHRS) (Joint Service) (427) Initiated prototype testing and production planning for Lightweight Motor Blower (LWMB) for M43A1E1 Mask (1860) Continued product improvement and follow-on operational testing of the Aircrew Integrated Helmet System (AIHS)(2442) Continued Aircrew Microclimatic Conditioning System (AMCS) prototype test and evaluation (1692) Initiated production contract planning for Lightweight Motor Blower (LWMB) for M43A1E1 Mask (1800) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Initiate Cockpit Airbag System (CABS) EMD for the AH-64 Apache (2017) Continue AIHS (P3I) efforts (1000) Complete AMCS test and evaluation (672) Initiate EMD for Advanced Laser Eye Protection (LEP) effort (Joint Service) (925) 											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604801A Aviation - Engineering Development

PROJECT

DC45

- **SBIR/STTR (36)**

FY 1996 Planned Program:

- Continue CABS EMD AH-64 Apache (2012)
- Initiate program planning for the Joint Cockpit Air Bag System (JCABS) EMD Program (Joint Service) (\$79)
- Continue Product Improvement of the AIHS in EMD (1075)
- Continue EMD for Advanced Laser Protective Visor (1476)

FY 1997 Planned Program:

- Complete EMD qualification test and evaluation of CABS for the AH-64 Apache (1864)
- Continue JCABS EMD Program (Joint Service) (2080)
- Complete AIHS P3I testing (900)
- Complete EMD for the Advanced LEP (Joint Service) (1200)
- Initiate EMD Program for Nuclear, Biological and Chemical Advanced Initiatives (855)

B. Program Change Summary

**Previous President's Budget
Appropriated Value**

FY94 Adjustments to Appropriated Value

- a. SBIR /STTR (-89)

b. Reprogrammed out of PE (-259)

President's Budget Submission

C. Other Program Funding Summary

RDT&E, A Budget Activity 4

PE 0603801A Project DB45 Aviation Life Support

Equipment (ALSE) Aviation Advanced

Development

Aircraft Procurement Army (ALSE) SSN AZ3110

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
8569	4672	5098	6844

8221	4650	5142	6899
------	------	------	------

<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To Compl</u>	<u>Total Cost</u>
9764	9997	3907	4238	2813	2740	0	0	0	33459
7192	8809	9732	9577	10281	10958	9954	9953	Continue	Continue

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995		
BUDGET ACTIVITY			PE NUMBER AND TITLE											
5 - Engineering And Manufacturing Development			0604801A Aviation - Engineering Development											
D. Schedule Profile														
			FY 1994		FY 1995		FY 1996		FY 1997					
			1	2	3	4	1	2	3	4	1	2	3	4
AH-64 CABS														
EMD Contract Award														
Critical Design Review (CDR)														
Development Test (DT)														
Aircrew Microclimatic Conditioning System (AMCS)														
Initial Technical Tests														
Complete Operational Test														
Milestone III IPR														
Advanced Laser Eye Protection (LEP)														
Dem/Val Phase														
EMD Phase														
Preliminary Design Review (PDR)														
Initiate Design Verification Testing														
Joint Cockpit Air Bag System (JCABS)														
Dem/Val Contract Award														
PDR														
EMD														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604801A Aviation - Engineering Development								DC45	
A. Project Cost Breakdown											
Contractor Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997						
Program Management Support		7359	2575	2492	3050						
Total		862	2075	2650	3849						
		8221	4650	5142	6899						
B. Budget Acquisition History and Planning Information											
Performing Organizations											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
JCABS Simula Phoenix, AZ	C-FFP	Mar 1997			0					1400	2400
AH-64 CABS Simula Phoenix, AZ	SS-CPFF	May 1994			550	0	1000	1312	750	0	3612
AMCS, MRI, Kansas City, Mo.		Mar 1994			4777	2374	500				7651
Advanced LEP NAWC Warminster, PA	C-CPFF	July 1995		1931	0	0	425	891	615	0	1931
Miscellaneous Subtotal	SS/C-CPFF	FY 95-97	N/A	N/A	5595	3512	628	333	340	0	10408
					10922	5886	2553	2536	3105	2400	27402
Support and Management Organizations Various Organizations Total Performing	MIPR	Various	N/A	N/A	5067	2335	2097	2606	3794	5386	21285
					15989	8221	4650	5142	6899	7786	48687
Government Furnished Property Not Applicable											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE						
5 - Engineering And Manufacturing Development	0604801A Aviation - Engineering Development						
	Total						
Prior to	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development	10922	5886	2553	2536	3105	2400	27402
Subtotal Support and Management	5067	2335	2097	2606	3794	5386	21285
Subtotal Test and Evaluation							
Total Project	15989	8221	4650	5142	6899	7786	48687

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering Development									
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1998 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		20665	16900	15928	14607	5970	0	0	1996	Continuing	Continuing
D134 OBJECTIVE INDIVIDUAL COMBAT WEAPON ENGINEER ¹ (G DEVELOPMENT		0	0	0	0	0	0	0	1998	Continuing	Continuing
D284 MULTI PURPOSE INDIVIDUAL MUNITION		0	0	12309	14607	5970	0	0	0	0	32886
D290 BUNKER DEFEAT MUNITION		6198	2807	0	0	0	0	0	0	0	8840
D531 105MM HOWITZER AMMUNITION IMPROVEMENT		5615	3128	3619	0	0	0	0	0	0	26610
D613 MORTAR SYSTEMS		9052	11165	0	0	0	0	0	0	0	72986
<p>A. Mission Description and Budget Item Justification: Provides for engineering development of weapons and munitions systems. The Multi-purpose Individual Munition (MPIM) provides the infantry with a fire-and-forget weapon capable of defeating enemy forces in buildings, bunkers and lightly armored vehicles. The Bunker Defeat Munition (BDM) is an interim solution to provide the individual soldier the ability to destroy field fortifications from a standoff position several years before the MPIM is ready. The howitzer ammunition effort supports development of ammunition for the M119A1 Howitzer. The PE also supports qualification of an Improved Mortar Ballistic Computer (IMBC). Projects within this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in budget activity 5.</p> <p>Project D284- Multi Purpose Individual Munition: Provides for an Engineering Manufacturing Development (EMD) of a lightweight, shoulder fired, multiple purpose weapon. Provides the infantry with a fire and forget weapon capable of defeating enemy forces in buildings, bunkers, and lightly armored vehicles. The Multiple Purpose Individual Munition/Short Range Anti-tank weapon (MPIM/SRAW) is capable of being fired quickly from its carrying configuration and can be safely fired from an enclosure for the close battle. It will replace the current AT4 system which was designed to defeat only light armor. This system will have tremendously increased lethality over the AT4 and will be multiple target capable. System design will allow for growth, service life extension and technology insertion to support the U.S. Army mission of crisis response to regionally based threats. The Army and U.S. Marine Corps have initiated a memorandum of agreement for horizontal technology integration effort utilizing the USMC SRAW flight module/launcher as the carrier for the MPIM warhead.</p>											
FY 1994 Accomplishments: Not applicable											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604802A Weapons And Munitions Engineering Development		
FY 1995 Planned Program: Not Applicable			
FY 1996 Planned Program:			
<ul style="list-style-type: none">• Proceed with MPIM/SRAW EMD (3384)<ul style="list-style-type: none">- Develop Program Milestone II documentation- Prepare request for proposal- Award EMD contract• Conduct system level trade studies (336)• Develop software (702)• Procure bus/launcher hardware for Pre-production testing (PPT) (6955)• Procure and deliver warhead components for PPT (932)			
FY 1997 Planned Program:			
<ul style="list-style-type: none">• Continue MPIM/SRAW EMD (2967)• Conduct preliminary design review (1551)• Conduct Early User Test (298)• Conduct Critical Design Review (2127)• Conduct Logistic Demonstration (697)• Complete Limited User Test (497)• Conduct PPT (526)• Procure hardware components for production qualification testing (4867)• Continue software development (1077)			
Project D290 Bunker Defeat Munition: This project provides for the development and type classification of a throwaway munition for neutralizing earth and timber field fortification, and breaching masonry and reinforced concrete structures.			
FY 1994 Accomplishments:			
<ul style="list-style-type: none">• Completed side-by side tests of candidate systems (5498)• Down-selected to "best value" system (300)• Initiated validation test to support type classification standard and materiel release (200)• Conducted TC-LP (200)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	February 1995	
5 - Engineering And Manufacturing Development	0604802A Weapons And Munitions Engineering Development	
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct final Technical Test/Operational Test program (2200) • Materiel release (352) • Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) (55) <p>FY 1996 Planned Program: No planned Program.</p> <p>FY 1997 Planned Program: No planned Program</p> <p>Project D531 - 105MM How Ammo IMP: This project provides for the fielding of an extended range 105MM artillery projectile for the M119A1 Howitzer and development of self-destruct fuzing technology for munitions.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Multi-phase hardware contract increments to provide Development Test & Evaluation (DT&E) hardware (836) • XM234 self-destruct fuze multi-phase contract increment (2664) • Load, assemble, and pack of EMD test cartridges at Lone Star Army Ammunition Plant (LSAAP) (372) • In-house performance testing and envelope studies of the XM80 grenade and XM915 projectile (188) • EMD testing with self destruct hardware (417) • Evaluation of all design hardware concepts, follow up all contracts and testing (1138) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Increment to contract to provide containers and additional grenade fuzes (174) • New machining operation added to grenade body process (249) • Procure additional projectile bodies (90) • Load, assemble, and pack (LAP) of Dual Purpose Improved Conventional Munition (DPICM) test cartridges at LSAAAP (360) • EMD testing, including HE airburst reliability, HE Sequential Environmental Safety Reliability, Twelve Meter Drop, SD Fuze Evaluation, Demonstration performance and suitability to enter DT&E (459) • XM80/XM24 Performance Testing: Degradation Effects (85) • AFATDS fire control software support program, USAFAS/ARDEC (50) • Development Test and Evaluation: safety phase (300) • Engineering evaluation of performance, follow up all testing (1295) • SBIR/STTR decrement (66) 		

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RD&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering Development	
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • LAP of remainder of DT&E test cartridges (780) • Development test and evaluation: testing (1870) • Follow up on all tests, evaluate test results, prepare technical data package for Milestone III. Finalize reports (969) <p>FY 1997 Planned Program: No planned program</p> <p>Project D613- Mortar Systems: This program provides funds to develop existing and emerging technology to enhance the effectiveness, lethality, versatility of use, mobility, and accuracy of mortar systems. Current mortar systems include conventional ammunition with a variety of fuzing and applications, weapons that range from man-portable 60mm to vehicle-mounted 120mm mortars, and related equipment such as fire control, mortar ballistic computer, training devices, and ammunition. This project provides for the qualification of a new Mortar Ballistic Computer to replace and insure continued maintainability of the nearly obsolescent current M23 version. This project also provides for the qualification of a full range training cartridge for the 120mm Battalion Mortar System to provide a realistic training alternative at a lower cost than training with high explosive service ammunition, and for the qualification of an illumination round (conventional and infrared).</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Developed software to provide ballistic data for all existing and planned mortar munitions (3027) • Evaluated and selected hardware platform for all Improved Mortar Ballistic Computers (125) • Evaluated and analyzed materiel requirements to achieve mortar systems mobility and accuracy requirements. Developed a program plan for a mortar fire control system (900) • Developed, tested and type classified a 120mm mortar Full Range Training Cartridge (5000) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Complete development of IMBC software (603) • Conduct pre-production qualification testing (PPQT) of IMBC (153) • Conduct operational testing of IMBC (673) • Type classify the IMBC (1502) • Type classify the Full Range Training Round (300) • Conduct PPQT for the Full Range Training Round (1700) • Complete development of 120mm illumination (conventional and infrared) rounds (4200) • Conduct engineering and PPQT (1800) • SBIR/STTR decrement (234) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604802A Weapons And Munitions Engineering Development	
FY 1996 Planned Program: No planned program		
FY 1997 Planned Program: No planned program		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1997
Appropriated Value	20346	20346
Adjustments to Appropriated Value	+519	
Current Budget Submit/President's Budget	20865	14607
	FY 1995	FY 1996
	9130	1837
		15928

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering Development								D134	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D134	OBJECTIVE INDIVIDUAL COMBAT WEAPON ENGINEERING DEVELOPMENT	0	0	0	0	0	0	0	1996	Continuing	Continuing
C. Other Program Funding Summary Not applicable											
D. Schedule Profile Not applicable											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering Development								D284	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D284	MULTI PURPOSE INDIVIDUAL MUNITION	0	0	12309	14807	5970	0	0	0	0	32886
C Other Program Funding Summary											
PE 0603313A, Proj D397		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Missile Procurement, Army, Budget Activity 2, SSN C09100		0	5601	4575	3892	0	0	0	0	0	10468
		0	0	0	0	0	30851	49770	49762	cont	cont
D. Schedule Profile											
1	Award EMD contract for MPIM/SRAW	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997	
2	Conduct Preliminary Design Review	3	4	1	3	4	2	3	4	1	2
3	Begin Pre-production Tests (PPT)									X	3
4	Conduct critical design review									X	4
	Initiate & complete Limited User Test									X	X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY					
5 - Engineering And Manufacturing Development					
PE NUMBER AND TITLE					
0604802A Weapons And Munitions Engineering Development					D284
A. Project Cost Breakdown					
Primary hardware development	FY 1994	FY 1995	FY 1996	FY 1997	
Program management support			10458	11298	
Developmental Test & Evaluation			1641	1588	
Total			210	1721	
			12309	14607	
B. Budget Acquisition History and Planning Information					
Performing Organizations					
Contractor or					
Government	Method/Type	Award or	Performing	Total	
Activity	or Funding	Obligation	Activity	Prior to	
Product Development Organizations	Vehicle	Date	EAC	FY 1994	
Prime	TBD	TBD	TBD	FY 1995	
Support and Management Organizations				FY 1996	
PM CCAWS, RSA	PO			FY 1997	
MICOM, RSA, AL	PO				
MISC	PO				
Test and Evaluation Organizations					
TECOM, APG,	PO				
MD					
Government Furnished Property: None					
Subtotal Product Development					
Subtotal Support and Management					
Subtotal Test and Evaluation					
Total Project					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604802A Weapons And Munitions Engineering

D290

Development

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D290 BUNKER DEFEAT MUNITION	6198	2607	0	0	0	0	0	0	0	9640

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Procurement Ammunition, Army: Bunker Defeating Munition, SSN E88401	0	7707	0	0	0	0	0	0	0	7707

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997
1	2	3	4	1	2	3	4	1	2

Side-by-side tests of candidate systems
Down select to "best value" system
Validation test to support mat'l release
Conduct TC-LP
Conduct validation test program
Complete type classification standard
Material release

• Denotes completed.

X* X* X* X
X X X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering									D290
		Development									
A. Project Cost Breakdown											
Contracts		FY 1994	FY 1995	FY 1996	FY 1997						
		3600	0	0	0						
Test and Evaluation		791	1352	0	0						
Project management and Engineering		1807	1200	0	0						
SBIR/STTR		0	55	0	0						
Total		6198	2607	0	0						
B. Budget Acquisition History and Planning Information											
Performing Organizations											
Contractor or	Method/Type	Award or	Performing	Project	Total						
Government	or Funding	Obligation	Activity	Office	Prior to						
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to	Total
Product Development Organizations										Complete	Program
Talley Defense Sys	FP	DEC 94	3600	3600	0	3600	0	0	0	0	3600
Support and Management Organizations											
ARDEC-Picatinny			3797	3797	0	1807	1200	0	0	0	3007
SBIR/STTR							55				55
Test and Evaluation Organizations											
TECOM-APG,			2233	2233	0	791	1352	0	0	0	2143
MD; YPG; RTTC,											
Redstone Arsenal, AL											
Government Furnished Property: None											
Subtotal Product Development						3600					3600
Subtotal Support and Management						1807	1255				3062
Subtotal Test and Evaluation						791	1352				2143
Total Project						6198	2607				8805

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering Development								D531	
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D531 105MM HOWITZER AMMUNITION IMPROVEMENT		5015	3128	3619	0	0	0	0	0	0	20610
C. Other Program Funding Summary:											
Procurement Ammunition, Army, Cartridge, Art, 105mm DPICM, XM915, SSN E53500											
D. Schedule Profile											
Contracts to provide DT&E hardware		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
XM234 S-D fuze multi-phase contract increment		0	0	0	20000	20000	50000	50000	15217	Compl	Cost
LAP of EMD test cartridges at Lone Star		2	3	1	2	4	2	3	1	2	3
In-house performance testing & envelope studies of XM180 grenade & XM915 proj			X*								4
EMD testing with self destruct hardware			X*								
Evaluation of all design h/w concepts			X*								
Increment to contract to provide containers and additional grenade fuzes											
LAP of DPICM test cartridges at LSAAP											
EMD testing; includes HE airburst reliability; HE Sequential Environmental Safety Reliability; SD fuze eval; other tests											
XM180/XM24 performance tests; degradation effects											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995				
BUDGET ACTIVITY				PE NUMBER AND TITLE											
5 - Engineering And Manufacturing Development				0604802A Weapons And Munitions Engineering Development											
FY 1994				FY 1995				FY 1996				FY 1997			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AFATDS fire control software support program, USAFAS/ARDEC															
DT&E: safety phase															
Engineering eval of performance								X							
LAP of remainder DT&E test cartridges															
DT&E Testing															
Follow up on tests, eval test results, prepare TDP for MS III. Finalize reports.									X				X		
													X		
									</						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT	
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering Development				D531	
A. Project Cost Breakdown							
	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program	
Program engineering and management support	1138	1310	969	0	0	5527	0
Contract engineering support	3872	783	780	0	0	1200	0
Test and evaluation support	605	969	1870	0	0	615	0
SBIR/STTR	0	66	0	0	0	3914	0
Total	5615	3128	3619	0	0	117	521
B. Budget Acquisition History and Planning Information							
Performing Organizations	Contractor or Government Performing Activity	Method/Type of Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994
Product Development Organization's							
TACOM/ARDEC	Allot	OCT 92	5527	5527	5527	1663	1381
Chamberlain:	Open/CPIF	SEP 93	1100	1100	1100	750	450
SAAP , Scranton	Open/CPIF	SEP 93	590	590	590	590	25
Anron Corp., Waukesha, WI	Open/CPIF	SEP 93	3914	3914	1250	1250	2664
KDI Precision Products,	Open/CPIF	SEP 93	117	117	117	117	0
Cincinnati, OH	Open/FP	SEP 93	371	371	371	371	150
Olin, East Alton, IL	Open/CPIF	SEP 93	238	238	238	238	156
Norris Industries, Vernon, CA	Open/FP	SEP 94	1792	1792	1792	1792	372
Dayron Corp., Orlando, FL	FP/Allot	JUL 94				0	640
LAAAP						0	780

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995
BUDGET ACTIVITY					PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development					0604802A Weapons And Munitions Engineering Development	
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Total Program
Support and Management Organizations						
SBIR/STTR						
Test and Evaluation Organizations						
TECOM, YPG AZ			3193	3193	80	3193
Government Furnished Property: None						
Subtotal Product Development					4741	13990
Subtotal Support and Management					80	66
Subtotal Test and Evaluation					4821	3193
Total Project						17249

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering Development								D613	
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D613	MORTAR SYSTEMS	9052	11165	0	0	0	0	0	0	0	72396
C. Other Program Funding Summary											
		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Procurement Ammunition, Army											
	SSN E25504, XM929	4784	21546	47704	10073	21285	19692	18525	21746	Continuing	Continuing
	SSN E25507, XM931	0	0	18768	19091	13622	13168	12085	14714	Continuing	Continuing
	SSN E25502, XM933	0	29789	0	0	0	1992	43771	0	0	202780
	Other Procurement, Army, 2: SSN K99200 (IMBC)	0	0	5019	4125	3833	0	0	0	0	39949
I. Schedule Profile											
1	Dev software to provide ballistic data for all existing & planned mortar munitions	FY 1994	3		FY 1995	2	3		FY 1996	2	3
	Eval & select h/w platform for all IMBCs		4	1		4	1	4	1	2	4
	Eval & analyze mat'l reqmts to achieve mortar sys mobility & accuracy reqmts		X*								
	Develop, test & TC a 120mm mortar Full Range Training Cartridge		X*								
	Complete development of IMBC software										
	Conduct DT/OT of the IMBC										
	Type classify the IMBC										
	*Denotes completed.										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY		PE NUMBER AND TITLE		DATE		PROJECT			
5 - Engineering And Manufacturing Development		0604802A Weapons And Munitions Engineering Development		February 1995		D613			
A. <u>Project Cost Breakdown</u>									
		FY 1994	FY 1995	FY 1996	FY 1997				
Product development		5327	4803	0	0				
Management/engineering Support		3638	3202	0	0				
Test and evaluation		87	2926	0	0				
SBIR/STTR		0	234	0	0				
Total		9052	11165	0	0				
B. <u>Budget Acquisition History and Planning Information</u>									
Performing Organizations									
Contractor or Government	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996
Product Development Organizations									
Pocahontas Industries	SS/CPIF	2Q95		3344	3344	0	3344	0	0
Moscow, PA									
Miltope:	C/FP	1Q95		310	310	0	310	0	0
Hope Hull, AI									
ARDEC	WR	2Q94		1124	1124	0	1124	0	0
MTA:	SS/FP	3Q94		351	351	0	351	0	0
Huntsville, AL									
Mitre:	SS/FP	3Q94		78	78	0	78		
Tinton Falls, NJ									
M930: ARDEC	WR	3Q95		1480	1480	0	-0	1480	0
Pine Bluff Arsenal	WR	3Q95		360	360	0	0	360	0
Crane Army Depot	WR	3Q95		1350	1350	0	0	1350	0
Diehl GmbH: GE	C/FP	3Q95		213	213	0	0	213	0
Martin Marietta	C/FP	3Q95		193	193	0	0	193	0
Ferrulmatic: NJ	C/FP	3Q95		604	604	0	0	604	0
IMBC: ARDEC	WR	1Q95		603	603	0	0	603	0

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE
	February 1995

5 - Engineering And Manufacturing Development

0604802A Weapons And Munitions Engineering

D613

Contractor or Government	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Support and Management Organizations											
PM Mortars, Picatinny, NJ	Allot	1Q94	433	433	0	433	0	0	0	0	433
ARDEC	WR	1Q94	2716	2716	0	2716	0	0	0	0	2716
CECOM	WR	1Q94	76	76	0	76	0	0	0	0	76
Ft Monmouth, NJ											
Camber Corp.	SS/FP	3Q94	413	413	0	413	0	0	0	0	413
Mt. Arlington, NJ											
SET:	SS/FP	3Q94	120	120	0	120	0	0	0	0	120
Knoxville, TN											
IMBC: PM Mtrs	Allot	1Q95	466	466	0	0	466	0	0	0	466
ARDEC	WR	1Q95	668	668	0	0	668	0	0	0	668
AMCCOM	WR	1Q95	235	235	0	0	235	0	0	0	235
CECOM	WR	2Q95	133	133	0	0	133	0	0	0	133
M931: ARDEC	WR	3Q95	1700	1700	0	0	1700	0	0	0	1700
SBIR/STTR					0	0	234	0	0	0	234
Test and Evaluation Organizations											
TECOM:	WR	2Q95	15	15	0	15	0	0	0	0	15
WSMR, NM											
CSTA: APG, MD	WR	2Q95	72	72	0	72	0	0	0	0	72
M930: Dugway PG	WR	3Q95	1800	1800	0	0	1800	0	0	0	1800
IMBC: WSMR	WR	2Q95	153	153	0	0	153	0	0	0	153
FT Hood, TX	WR	4Q95	673	673	0	0	673	0	0	0	673
M931:CSTA, APG	WR	4Q95	300	300	0	0	300	0	0	0	300

Government Furnished Property: None

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604802A Weapons And Munitions Engineering Development	D613	
Total			
Prior to			
	FY 1994	FY 1995	FY 1996
Subtotal Product Development	5207	4803	
Subtotal Support and Management	3758	3436	
Subtotal Test and Evaluation	87	2926	
Total Project	9052	11165	
Budget to			
	FY 1997	Complete	
			Program
			10010
			7194
			3013
			20217

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development									
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	22397	21970	20756	19150	18722	12463	7663	7681	Continuing	Continuing	
DH01 Combat Engineer Equipment Engineering Development	4623	2460	9691	10069	7999	4786	100	100	Continuing	Continuing	
DH14 Logistics Support Equipment Engineering Development	2657	6615	1362	90	91	91	100	100	Continuing	Continuing	
DL30 General Support Equipment Engineering Development	2682	1567	1649	1734	2205	2442	2199	2210	Continuing	Continuing	
DL41 Fuels Handling Equipment Engineering Development	1424	1467	1220	1070	1193	1220	1199	1197	Continuing	Continuing	
DL42 Camouflage System Engineering Development	0	0	1290	995	995	995	500	499	Continuing	Continuing	
D194 Engine Driven Generators Engineering Development	1506	1998	833	299	270	266	719	722	Continuing	Continuing	
D279 Airdrop Equipment Engineering Development	4462	1467	1463	1466	1502	1507	1546	1546	Continuing	Continuing	
D429 Tactical Rigid Wall Shelters Engineering Development	5043	3581	2870	3377	2467	1134	1296	1297	Continuing	Continuing	
D461 Marine Oriented Logistics Equipment Engineering Development	0	2794	346	0	0	0	0	0	Continuing	Continuing	
A. Mission Description and Budget Item Justification: This program supports engineering and manufacturing development (EMD) of new and advanced combat support and combat service support equipment.											
Project DH01 - Combat Engineer Equipment-Engineering Development: This project supports the development and transition to procurement of military tactical bridging for wet and dry bridging requirements such as the Improved Common Bridge Transporter (ICBT), the Improved Ribbon Bridge (IRB) Bays, the Military Load Class (MLC) 70 Ton version of the Armored Vehicle Launched Bridge (AVLB 70), the Heavy Dry Support Bridge (HDSB), and the testing of the MLC 96 Ton upgrade											
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development		
<p>for the Medium Girder Bridge (MGB). All bridging work is in support of the increased MLC requirements for the M1 tank. In FY94 this project also supports the development of low cost and low observable camouflage systems for suppression of visual, near-infrared, thermal, radar, and acoustic signatures of high mobile and semi-mobile weapons systems. Camouflage systems development is restructured to Project DL42 in FY 96. This project also provides for the non-developmental item acquisition of the Deployable Universal Combat Earthmover (DEUCE) and market investigations of other engineer construction equipment.</p>			
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted Preplanned Product Improvement (P3I) for general purpose camouflage with enhanced thermal radar and visual signature reduction (465) • Completed testing of AVLB 70 (760) • Type classified the AVLB 70 and transitioned to production (499) • Investigated the Medium Girder Bridge (MGB) for military load class 96 capability (350) • Conducted Production Qualification Test (PQT)/Operational Test (OT) and Milestone III Review for Aviation and General Purpose Ultra Light Camouflage Net (ULCANS) and Preproduction Qualification Test (PPQT)/OT/Milestone Review for High Mobility Camouflage (HMC) for M1 tank and M2 Bradley (480) • Acquired four upgraded prototype ICBTs and initiate PQT (661) • Conducted Milestone I/II Review and pre-award contract activities for the DEUCE (1408) 			
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct Source Selection Board for DEUCE contract (200) • Procure preproduction prototypes for DEUCE (824) • Conduct testing of preproduction prototypes for DEUCE (357) • Complete ICBT PQT. (275) • Complete ICBT OT. (300) • Initiate and conduct ICBT Milestone II review. (453) • Adjustment due to SBIR/STTR. (51) 			
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Conduct Source Selection Board for HDSB (640) • Conduct Milestone II Review for HDSB (412) • Award HDSB Engineering Manufacturing Development (EMD) contract (7441) • Release Request for Proposal for IRB bays (398) • Conduct Milestone III for ICBT (300) • Complete preproduction qualification test for DEUCE (300) • Conduct Milestone III IPR for DEUCE (100) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE
		0604804A Logistics And Engineer Equipment Engineering Development
<ul style="list-style-type: none"> • Conduct market investigation for construction equipment (100) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Fabricate HDSB EMD prototype #1 (6209) • Conduct Contractor Testing of HDSB EMD prototype (2086) • Prepare for award of IRB bays RD/TE contract (380) • Develop design for IRB bays (1314) • Conduct market investigation for construction equipment (100) <p>Acquisition Strategy: ICBT - Competitive RDTE followed by procurement. HDSB - Competitive RDTE followed by procurement. DEUCE - Competitive procurement of integrated NDI.</p> <p>(U) Project DH14 - Logistics Support Equipment Development: Develops and transitions to procurement a series of Material Handling Equipment (MHE) items.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Completed Purchase Description (477) • Released Request for Proposal for ATLAS (423) • Conducted Special-In-Process Review for ATLAS (70) • Approved ATLAS Source Selection Plan (30) • Supported delivery of Improved Ribbon Bridge transporters in DH01 for testing (1607) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct Source Selection Board for ATLAS (642) • Award ATLAS contract and fabricate ATLAS Preproduction Qualification Test (PPQT) vehicles (3688) • Develop ATLAS logistics (885) • Initiate ATLAS PPQT testing (1261) • Adjustment due to SBIR/STTR. (139) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Complete Preproduction Qualification Testing of the ATLAS (1008) • Complete ATLAS logistics development (54) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	
<ul style="list-style-type: none"> • Conduct ATLAS Milestone III IPR (200) • Conduct market investigations of material handling equipment (100) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> • Conduct market investigations for the Container Cargo Retriever (CCR) (25) • Conduct market investigations for warehouse Material Handling Equipment (MHE) (25) • Conduct market investigations for other general Material Handling Equipment (40) 		
Acquisition Strategy: ATLAS - Competitive procurement of integrated NDI. CCR - P 3 I improvements to ATLAS. MHE - Competitive procurements for miscellaneous MHE.		
Project DL39 - General Support Equipment Engineering Development: Develop and transition to procurement water purification equipment, maintenance equipment and environmental control units (ECU) that do not use ozone depleting refrigerants.		
FY 1994 Accomplishments: <ul style="list-style-type: none"> • Completed evaluation of NBC protective covers for 600 gallon per hour (GPH) Reverse Osmosis Water Purification Units (ROWPU). (100) • Performed Cost and Operational Effectiveness Analysis for NBC protection of 3000 GPH ROWPU. (150) • Initiated final design of Modular Collective Protective Equipment for 3000 GPH ROWPU. (50) • Completed Technical Data Package and implementation procedures for cold weather kit for the 600 GPH ROWPU. (75) • Initiated evaluation of cold weather protection for storage and distribution equipment. (151) • Initiated evaluation of candidate lightweight water purifiers (LWP). (221) • Prepared program management documentation for LWP. (100) • Completed standardization of chemicals and evaluation of ocean intake and direct drive systems and improvements to the family of water supply equipment. (863) • Completed fabrication of four (4) production prototypes of the Heavy Contact Maintenance Truck (CMT) (200) • Completed test of the CMT (130) • Completed Technical Data Package for the CMT (642) 		
FY 1995 Planned Program:		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	
<ul style="list-style-type: none"> • Complete testing of NBC protective covers for 3000 GPH ROWPU and incorporate into existing Technical Data Packages (TDPs) and manuals. (115) • Complete winterization of water storage and distribution equipment and incorporate improvements into TDPs and manuals. (283) • Continue evaluation of candidate lightweight water purifiers. (201) • Prepare contract package for prototype of lightweight water purifier. (50) • Conduct Milestone I/II In Process Review for High Capacity Purifier. (300) • Initiate contract package for design and fabrication of prototype High Capacity Purifiers. (150) • Perform trade-off analysis of high Capacity Purifier Subsystems. (357) • Complete Market Investigation of Packaged Water System. (100) • Adjustment due to SBIR/STTR. (31) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Conduct tests on 36K British Thermal Units per Hour (BTUH) Environmental Control Units (ECU) prototypes. (90) • Award contract for design/fabrication of prototype Lightweight Water Purifier. (200) • Conduct Pre Production Qualification Testing of Lightweight Water Purifier. (100) • Award contract for design/fabrication of prototype High Capacity Purifier. (1000) • Conduct Milestone I/II In Process Review for Packaged Water System. (259) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Prepare data package for improved ECU procurement. (178) • Conduct Initial Operational Test and Evaluation of the Lightweight Water Purifier (LWP). (200) • Hold Milestone III In Process Review to Type Classify Lightweight Water Purifier. (161) • Complete fabrication of prototype High Capacity Purifier. (508) • Conduct Engineering Testing of High Capacity Purifier. (207) • Award contract for design/fabrication of Engineering Development prototype for Packaged Water System. (273) • Conduct Milestone II In Process Review for High Capacity Purifier. (207) <p>Acquisition Strategy: - Competitive procurement for all items under this project.</p> <p>DLA1 - Fuels Handling Equipment Engineering Development: Develop and transition to procurement petroleum storage and distribution systems.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development	
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Fabricated three Lightweight Arctic Forward Area Refueling Equipment (LAFARE) prototypes. (928) • Completed component testing of LAFARE (246) • Conducted logistics demonstration (Part I) of LAFARE (200) • Continued long term exposure testing of tank fabrics. (50) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct TT/OT&E, logistics demonstration, and physical configuration audit for LAFARE. (950) • Conduct Milestone III - type classification for LAFARE. (175) • Conduct Milestone I/II IPR for the Helicopter Extended-Range Refueling System (HERRS) (157) • Prepare statement of work for design and testing of the HERRS prototype. (93) • Continue long term exposure testing of tank fabrics. (50) • Adjustment due to SBIR/STTR. (28) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Award HERRS EMD contract (120) • Design and fabricate HERRS initial prototypes. (750) • Initiate HERRS component testing. (200) • Prepare program management documentation for bulk fuel storage (BFS). (150) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Complete HERRS component testing. (150) • Conduct system test of HERRS. (350) • Fabricate final HERRS prototype. (400) • Conduct Milestone I/II in process review for the BFS. (170) <p>Acquisition Strategy: - Competitive procurement for all items under this project.</p> <p>Project DL42 - Camouflage System Engineering Development: Project DL42, which is restructured in FY 96 from DH01, provides for development and transition to procurement low cost low observable systems for suppression of visual, near-infrared, thermal, radar, and acoustic signatures of highly mobile and semi-mobile weapon assets.</p> <p>FY 1996 Planned Program:</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	
<ul style="list-style-type: none"> Develop desert Ultralightweight Camouflage Screening System (ULCANS) (800) Develop Multispectral Camouflage System-Mobile Equipment (MSCS-ME) for selected Army assets (490) 		
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Develop snow ULCANS (300) Incorporate Electro Optic (EO) signature enhancements in ULCANS and MSCS-ME (695) <p>Project D194 - Engine Driven Generators Engineering Development: Develop and transition to procurement a series of diesel engine driven generator sets/auxiliary power units and provide continual modernization of fielded sets in order to meet federally mandated environmental statutes with reduced weight and size and reduced thermal signatures.</p>		
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Awarded multiple development contracts for fabrication/testing for a 5 kW 28VDC auxiliary power unit (APU). (1446) Completed the test phase of Foreign Comparative Test program for L.T 3 kW program. (10) Completed cold weather starting kit program for Tactical Quiet Generator (TQG) sets. (50) 		
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Complete design and down-select 5 kW 28V DC APU (1574) Initiate testing 5kW 28 VDC APU. (383) Adjustment due to SBIR/STTR. (32) 		
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Begin fabrication of 5 kW 28VDC APU Production Qualification Test (PQT) models. (268) Begin testing of 5 kW 28VDC APU PQT models. (270) Complete fabrication of 5 kW 28 VDC PQT Models. (270) Begin development of 3 kW Tactical Quiet Generator (TQG). (25) 		
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Complete testing of 5 kW 28VDC APU PQT models. (150) Complete preparation of formal program review of 5 kW 28VDC APU. (149) <p>Acquisition Strategy: - Competitive procurements of integrated NDI generators and the Preproduction Qualification testing for the generators.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development		
<p>Project D279 - Airdrop Equipment Engineering Development: Develop and transition to procurement cargo parachutes, airdrop containers and associated equipment. Air delivery equipment will enhance mission capabilities by fully using the airdrop capacity of C-5 and C-17 aircraft for resupply and cargo air delivery.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Completed combined technical/user testing of single unit 60,000 lbs airdrop system allowing airdrop of combat-ready vehicle/weapon systems. (1680) Completed user testing of All Purpose Weapons and Equipment Container (AIRPAC) to assure airborne soldiers are fully combat operational upon landing. (365) Provided support to the USAF C17 aircraft program to ensure that Army personnel and cargo requirements are met. (2417) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Complete combined technical/user testing of linked platforms for 60,000 lbs airdrop system allowing increased lethality and rapid ground assembly of prime mover weapons systems and ammo combinations. (580) Initiate development of Guided Parafoil Aerial System (GPADS)-Light, Rapid Acquisition Program to provide a precision guided offset delivery capability for payloads up to 1500 pounds. (250) Continue support to the airdrop capability portion of the ongoing USAF C17 program. (576) Type classify AIRPAC for transition to procurement and operational use. (50) Adjustment due to SBIR/STTR. (31) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> Type classify 60,000 lbs (Single and Linked Platform) to increase lethality of delivered systems. (250) Continue the Army airdrop capability effort directly supporting the USAF C17 program. (498) Conduct technical/user tests of GPADS-Light as part of Rapid Acquisition Program. (745) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> Complete and transition to procurement the GPADS-Light capability for precision guided airdrop. (746) Award contract for GPADS-Medium to provide precision guided offset delivery capability for payloads up to 20,000 lbs. (750) <p>Project D429 - Tactical Rigid Wall Shelters Engineering Development: Develop and transition to procurement a series of rigid wall shelters (RWS) with added capabilities and enhanced survivability.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> Conducted Pre-Production Test of non-expandable Electro-Magnetic Interference (EMI) shelter prototypes for enhanced EMI security for Division C2 system. (320) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development	February 1995
<ul style="list-style-type: none"> Completed development of Standard Integrated Command Post System (SICPS) 5-ton E-van for mobile C2 systems. (536) Type classified standard the lightweight multipurpose shelter (LMS) for HMMWV-mounted battlefield systems. (50) Prepared Technical Data Packages (TDPs) for Modular Extendible Rigid Wall Shelter (MERWS) for Corps level medical applications and disaster relief. (439) Fabricated integrated Chemical/Biological Protective Shelter (CBPS) wheeled vehicle prototypes and conduct technical testing to provide mobile chemically protection Battalion Aid Station. (1990) Completed technical testing of SICPS RWS objective version for the Army Tactical Command and Control System (ATCCS); provides added power and increases mission payload. (950) Initiated testing of SICPS tent P31. (283) Completed Operational Testing (OT) and TC-STD Version 1 SICPS RWS for ATCCS. (475) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> Complete testing and conduct Milestone III for non-expandable EMI International Standards Organization (ISO) shelter which will provide 60dB EMI and EMP protection to critical battlefield C4 system. (200) Complete technical testing and conduct operational test of version 3 SICPS RWS. (1255) Milestone III for MERWS, completing development. (250) Complete component testing of SICPS P31 tent. (500) Conduct special IPR and award Limited Procurement Contract for CBPS. (250) Design study for ISO P31 Components. (250) Design study for LMS upgrade. (250) Procure new technology components for objective SICPS. (550) Adjustment due to SBIR/STTR. (76) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> Type Classify version 3 SICPS RWS. (800) Begin test of new technology components (engine, generator, Environmental Control Unit (ECU), regenerative CB filters) for objective SICPS; lighter weight, quieter, less maintenance. (980) Fabricate ISO P31 prototypes. (300) Fabricate upgraded LMS prototypes. (290) Design investigation on CBPS armored vehicle integration, provides mobile medical aid for Heavy Divisions. (500) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> Conduct technical testing of ISO EMI P31 components. (400) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development		
<ul style="list-style-type: none"> • Award R&D contract to develop full integration package for CBPS armored vehicle mobile medical aid station integration. (557) • Complete testing TDP and conduct Milestone III for LMS upgrade. (200) • Complete testing next generation SICPS components. (500) • Conduct technical/operational testing of 5th wheel trailer-mounted SCIPS RWS. (1720) 			
<p>Project D461 - Marine Oriented Logistical Equipment Engineering Development: Develop and transition to procurement watercraft systems needed to perform Logistics Over The Shore (LOTS) operations in support of the Army Strategic Mobility Plan.</p>			
<p>FY 1994 Accomplishments: Project not funded in FY 1994.</p>			
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Test and evaluate the Lighter Amphibian Resupply Cargo-60 Ton (LARC-LX) prototype (932) • Manual update data for the LARC-LX prototype (1408) • Landing Craft Mechanized (LCM-8) to Coastal, Harbor and Inland (CHI) Boat propulsion system and deck arrangement conversion (433) • Adjustment due to SBIR/STTR. (59) 			
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Development of berthing and propulsion systems for the Floating Crane (278) • Development of fendering system for the Pusher Tug (70) 			
<p>FY 1997 Planned Program: Project not funded in FY 1997</p>			
<p>Acquisition strategy: Floating Crane -- Competitive Procurement to performance specification Pusher Tug -- Competitive Procurement to performance specification</p>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	0604804A Logistics And Engineer Equipment Engineering Development	
B. Program Change Summary		
5 - Engineering And Manufacturing Development	FY 1994	FY 1995
	25519	21171
	25519	21970
	-3122	
	22397	20756
		19150
Previous President's Budget	FY 1996	FY 1997
Appropriated Value	12418	10410
Adjustments to Appropriated Value (Total PE)		
a. SBIR/STTR decrement (-386)		
b. Reprogrammings out of PE (-2736)		
Current Budget Estimate Submission (BES)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

**0604804A Logistics And Engineer Equipment
Engineering Development**

PROJECT

DH01

COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DH01	Combat Engineer Equipment Engineering Development	4623	2460	9681	10089	7989	4788	100	100	Continuing	Continuing

C. Other Program Funding Summary

	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To</u> <u>Compl</u>	<u>Total</u> <u>Cost</u>
OPA, BA3, Other Support Equipment										
G82400 Heavy Dry Support Bridge							10264	10491	96237	116992
M26800 Improved Common Bridge Transporter			3828	4472	4574	4675	4778	4883	14078	41288
M26600 Improved Ribbon Bridge, Int. Bays							3371	2855	23145	29371
M26700 Improved Ribbon Bridge, Ramp Bays							1445	1223	10101	12769
Construction Equipment (Various)	17337	9206	21021	10398	3399	17617	35483	32039	Cont'd	Cont'd

D. Schedule Profile

File		
1	Milestone 0 IPR for DUECE	
2	Milestone I/II IPR for DUECE	
	Release RFP for DUECE	
	Four prototype ICBT's upgraded, contractor tested and delivered.	
	ICBT Logistic Demo Completed	
	Commencement of ICBT PQT	
	Conduct P3I for GP Camouflage	
	Conduct ULCANS PQT/QT & and Milestone III Review	
	Award DUECE contract	
	Conduct PPQT Test for DUECE	
	Conduct ICBT IOT&E	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										
BUDGET ACTIVITY					DATE					
5 - Engineering And Manufacturing Development					February 1995					
PE NUMBER AND TITLE					PROJECT					
0604804A Logistics And Engineer Equipment Engineering Development					DH01					
FY 1994					FY 1995					
1	2	3	4	1	2	3	4	1	2	
Complete preproduction qualification test for DEUCE										
Conduct Milestone III IPR for DEUCE										
Conduct Milestone II Review for HDSB										
Award HDSB EMD Contract										
Conduct Milestone III Review for ICBT										
Release Request for Proposal for IRB Bays										
Fabricate HDSB EMD Prototype #1										
Conduct contractor testing of HDSB EMD prototype										
Award IRB bays contract										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development	DH01	
A. Project Cost Breakdown			
DH01 DEUCE & Construction Equipment			
Request For Proposal Preparation			
Test planning and development			
Integrated Logistics Spt (ILS)			
Program Management Support			
Govt Engineering Spt			
Purchase Description Development			
Program Cost Estimate (PCE)			
Environmental Assessment			
Prototype Hardware Development			
Developmental and Operational Testing			
Construction Equip Market Investigations			
Miscellaneous (SBIR/STTR = 76 in FY 95)			
Subtotal			
DH01 BRIDGING (HDSB, ICBT & IRB)			
Primary Hardware Development			
Integrated Logistics Support (ILS)			
Technical Data development and data rights			
Developmental Test and Evaluation			
Program Management Support (three programs)			
Miscellaneous (SBIR/STTR = 25 in FY 95)			
Subtotal			
DH01 CAMOUFLAGE			
Development of Prototypes			
Program Management Spt			
Technical Data Package (TDP) Preparation			
Document Support			
Testing			
Miscellaneous			
Subtotal			
Grand Total for Project DH01			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995	PROJECT
BUDGET ACTIVITY										PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development										0604804A Logistics And Engineer Equipment		
Engineering Development										Engineering Development		
B. Budget Acquisition History and Planning Information												
Performing Organizations												
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations												
Contractor TBD	C-CPFF	Oct 95	18399	18399	18399	N/A			7843	6846	14787	18399
Contractor TBD	C-CPFF	Feb 97	2152	2152	2152	N/A				1394	1394	2152
MTC-BELVOIR												
Total						N/A	1394	1053	1200	1192	3634	Cont'd
							1394	1053	9043	9432		
Support and Management Organizations NONE												
Test and Evaluation Organizations NONE												
Contractor or Gov't Performing Activity												
Miscellaneous												
Contractor or Gov't Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
TBD		Nov 94	N/A	N/A	N/A	N/A	150		98			
Contractor TBD	FFP	Mar 95	N/A	N/A	N/A	N/A		800				
RADIAN INC.	TASK ODR	Various	N/A	N/A	N/A	N/A	184					
MTC-Belvoir	PO	Various	N/A	N/A	N/A	N/A	848					
BRTRC	TASK ORD	Various	N/A	N/A	N/A	N/A	580					
VSE	TASK ORD	Various	N/A	N/A	N/A	N/A	454	150	150	150		Cont'd
TACOM	1095	Various	N/A	N/A	N/A	N/A	145					
ATCOM	1095	Various	N/A	N/A	N/A	N/A		150	150			
TECOM	1095	Various	N/A	N/A	N/A	N/A		307	250	507		Cont'd
CSTA	1095	Various	N/A	N/A	N/A	N/A	539					
ARL	1095	Various	N/A	N/A	N/A	N/A	161					
PM-113	1095	Various	N/A	N/A	N/A	N/A	28					
Total		Various	N/A	N/A	N/A	N/A	140	1407	648	657		Cont'd
							3229					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE **February 1995**

BUDGET ACTIVITY		PE NUMBER AND TITLE					
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development					
		Total					
	Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
	Cont'd	1394	1053	9043	9432	Cont'd	Cont'd
Subtotal Product Development	0					0	0
Subtotal Support and Management	0					0	0
Subtotal Test and Evaluation	Cont'd	3229	1407	648	657	Cont'd	Cont'd
Miscellaneous	Cont'd	4623	2460	9691	10089		
Total Project							

Government Furnished Property **NONE**

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development								DH14	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DH14 Logistics Support Equipment Engineering Development		2657	6815	1382	90	91	91	100	100	Continuing	Continuing
C. Other Program Funding Summary											
OPA, BA3, Other Support Equipment											
M41800 All Terrain Lifting Articulating System				14403	16589						
ML5365 Items Less Than \$2.0M (MHE)		5816	4694	2843	2772	1827	1826	1988	1989	Cont'd	Cont'd
D. Schedule Profile											
Contract Award (ATLAS)		FY 1994			FY 1995		FY 1996			FY 1997	
1	2	3	4	1	2	3	4	1	2	3	4
						X					
Prototype Fabrication (ATLAS)											
Prototype delivery (ATLAS)						X					
Pre Production Qualification Test Initiated (ATLAS)											
Type Classification Generic (ATLAS)											
1st Production Quality call up (ATLAS)											
Conduct Market Investigations for MHE											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE **February 1995**

**PROJECT
DH14**

5 - Engineering And Manufacturing Development

0604804A Logistics And Engineer Equipment Engineering Development

<u>A. Project Cost Breakdown</u>	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Government Engineering and Other Support	1257	910		
Primary Hardware Development	640	2639		
Developmental Test and Evaluation	400	2539	1008	
Program Management Support	230	527	254	
Miscellaneous	130		100	90
Total	2657	6615	1362	90

B. Budget Acquisition History and Planning Information

Performing Organizations											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Contractor TBD	CPFF	Mar 95	3175	3175			3175				
Support and Management Organizations : NONE											
Test and Evaluation Organizations:											
TECOM	MIPR	Various	NA			420	2306	1069			
Miscellaneous											
TARDEC	MIPR	Various	NA			947	820	118	70	Cont'd	Cont'd
BRDEC	PO	Various	NA			885					
PM CE/MHE	PO	Various	NA			175	175	175	20	Cont'd	Cont'd
Contractors	CPIF	Various				230					
TECOM	MIPR	Various	NA				139				
TOTAL						2237	6615	1362	90		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604804A Logistics And Engineer Equipment
Engineering Development

	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development	Cont'd	0	3175			Cont'd	Cont'd
Subtotal Support and Management	Cont'd	0	0			Cont'd	Cont'd
Subtotal Test and Evaluation	Cont'd	420	2306	1069		Cont'd	Cont'd
Miscellaneous	Cont'd	2237	1134	293	90	Cont'd	Cont'd
Total Project	Cont'd	2657	6615	1362	90	Cont'd	Cont'd

Government Furnished Property : None

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY		PE NUMBER AND TITLE							DATE
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development							February 1995
									PROJECT DL39
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete
DL39 General Support Equipment Engineering Development	2682	1587	1649	1734	2205	2442	2199	2219	Continuing
C. Other Program Funding Summary									
RDTE, A Budget Activity 4									Total
PE 0603804A, Project DK39 General Support Equip Adv Dev	984	853	985	900	1497	1482	1799	1970	Cont'd
D. Schedule Profile									
Complete evaluation of NBC protective covers for 600 GPH ROWPU.				FY 1995		FY 1996			FY 1997
Perform COEA of NBC protection for 3000 GPH ROWPU.		X*							
Initiate final design for 3000 GPH ROWPU									
Modular Collective Protective Equipment. Complete TDP and implementation procedures for the cold weather kit for the 600 GPH ROWPU.		X*							
Initiate evaluation of cold weather protection for storage & distribution equip.									
Initiate evaluation of candidate lightweight water purifiers (LWP).		X*							
	1	2	3	4	1	2	3	4	1
									2
									3
									4

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY		PE NUMBER AND TITLE		DATE					
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development		February 1995					
		FY 1994		FY 1995		FY 1996		FY 1997	
		1	2	3	4	1	2	3	4
Complete standardization of chemicals and evaluation of ocean intake and direct drive systems and improvements to the family of water supply equipment.					X*				
Complete fabrication of 4 production prototypes of the Heavy Contact Maintenance Truck (CMT).					X*				
Complete test of the CMT.					X*				
Complete TDP for the CMT.					X*				
Complete testing of NBC protective covers for 3000 GPH ROWPU and incorporate into existing TDPs and manuals.						X			
Complete winterization of water storage & distribution equipment and incorporate improvements into TDPs and manuals.						X			
Continue evaluation of candidate lightweight water purifiers.						X			
Prepare contract package for prototype of lightweight water purifier.						X			
Conduct Milestone I IPR						X			
High Capacity Purifier (HCP).									
Perform trade-off analysis on HCP subsystems						X			
Initiate contract package for design and fabrication of prototype High Capacity Purifiers.						X			
Complete Market Investigation of Packaged Water Systems.									
Conduct tests on 36K ECU prototypes.									
Award contract for design/fabrication of prototype Lightweight Water Purifier.						X			
Conduct Pre Production Qualification									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY									DATE
PE NUMBER AND TITLE									
3 - Engineering And Manufacturing Development									February 1995
0604804A Logistics And Engineer Equipment Engineering Development									
	FY 1994				FY 1995				FY 1996
	1	2	3	4	1	2	3	4	1
									2
									3
									4
Testing of Lightweight Water Purifier.									
Award contract for design/fabrication of prototype High Capacity Purifier.									
Award contract for design/fabrication of EMD prototype Packaged Water System.									
Prepare data package for improved ECU procurement.									
Conduct IOT&E of the LWP.									
Hold Milestone III In Process Review to Type Classify Lightweight Water Purifier.									
Complete fabrication of prototype High Capacity Purifier.									
Conduct Engineering									
Testing of High Capacity Purifier.									
Conduct Packaged Water System MS I/II IPR									
Conduct MS II IPR for High Capacity Purifier									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY		PE NUMBER AND TITLE				DATE	PROJECT		
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development				February 1995	DL39		
A. Project Cost Breakdown									
Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997					
Operational Test and Evaluation	1700	1019	1000	1075					
Development Test and Evaluation	130	0	0	150					
Government Engineering and Support	0	0	225	150					
Government Program Support	377	212	224	201					
Miscellaneous	200	150	150	108					
Total	275	206	50	50					
	2682	1587	1649	1734					
B. Budget Acquisition History and Planning Information									
Performing Organizations									
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
									Budget to Complete
									Total Program
Product Development Organizations -NONE									
Support and Management Organizations - NONE									
Test and Evaluation Organizations - NONE									
Miscellaneous									
TACOM	In-House	Various	1051	1051		1944	524	349	349

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)											
BUDGET ACTIVITY					DATE		PROJECT				
5 - Engineering And Manufacturing Development					February 1995		DL39				
PE NUMBER AND TITLE					0604804A Logistics And Engineer Equipment Engineering Development						
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Contractors-Various	CPFF					222	527	1000	1185		
TECOM	MIPR						100	100	100		
TEXCOM	MIPR					65	100	200			
NFESC	MIPR					100	150				
CRREL	MIPR					70	75				
BOR	MIPR					80	80				
NSF	MIPR					201					
DESC	MIPR						31				
SBIR/STTR in FY 95						2682	1587	1649	1734		
Total											
Government Furnished Property - N/A											
Subtotal Product Development - NONE											
Subtotal Support and Management - NONE											
Subtotal Test and Evaluation - NONE											
Subtotal Miscellaneous											
Total Project											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995

PAGE NUMBER AND TITLE

0604804A Logistics And Engineer Equipment

DL41

	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL41	Fuels Handling Equipment Engineering Development	1 424	1 457	1 220	1 070	1 193	1 220	1 199	1 197	Continuing	Continuing

C. Other Program Funding Summary

RDTE, A Budget Activity 4

**PE 0603804A, Project DK41, POL Distribution
Equip Adv Dev**

D. Schedule Profile

Fabricate 3 LAFARE prototypes.
Completed component testing of LAFARE.
Conduct TT/OT&E, logistics demonstration,
and physical configuration audit for LAFARE.
Conduct MS III - TC for LAFARE.
Conduct MS I/II IPR for the HERRS.
Award HERRS EMD contract.
Design & fabricate HERRS initial prototypes.
Initiate HERRS component testing.
Fabricate final HERRS prototype.
Conduct MS I/II IPR for the BFS.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995
BUDGET ACTIVITY					PE NUMBER AND TITLE	PROJECT
5 - Engineering And Manufacturing Development					0604804A Logistics And Engineer Equipment Engineering Development	DL41
A. Project Cost Breakdown						
Hardware Development					FY 1994	FY 1995
Test and Evaluation					1,283	722
Government Engineering and Support					22	350
Government Program Support					70	282
Miscellaneous					49	75
Total					0	28
					1424	1457
						1220
						800
						50
						148
						72
						0
						1,070
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or	Method/Type	Award or	Performing	Project	Total	
Government	Contract	Obligation	Activity	Office	Prior to	
Performing	or Funding	Date	EAC	EAC	FY 1994	
Activity	Vehicle				FY 1994	
					FY 1995	
					FY 1996	
					FY 1997	
					Budget to	Total
					Complete	Program
Product Development Organizations - NONE						
Support and Management Organizations - NONE						
Test and Evaluation Organizations - NONE						
Miscellaneous:						
TARDEC	In-House	Various	119	119		
Contractors (TBD)	CPFF	9312	1283	1283		
TECOM	MIPR	9404	12	12		
TEXCOM	MIPR	9402	10	10		
ARL						
SBIR/STTR						
Government Furnished Property - NONE						
					350	245
					722	900
					232	40
					100	10
					25	25
					28	20

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT		
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development		DL41		
		<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Budget to Complete</u>
						<u>Total Program</u>
Subtotal Product Development - NONE						
Subtotal Support and Management - NONE						
Subtotal Test and Evaluation - NONE						
Subtotal Miscellaneous		1424	1457	1220	1070	Cont'd
Total Project		1424	1457	1220	1070	Cont'd

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 1995

5 - Engineering And Manufacturing Development

**0604804A Logistics And Engineer Equipment
Engineering Development**

**PROJECT
DL42**

	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL42 Camouflage System Engineering Development		0	0	1290	995	995	995	500	499	Continuing	Continuing

C. Other Program Funding Summary

**RDTE, A Budget Activity 2
PE 0602786A, AH20, Mobility Equipment
Technology**

NOTE: Camouflage is a Defense Business Operating Fund (DBOF) production item.

D. Schedule Profile

	FY 1994		FY 1995		FY 1996		FY 1997	
	1	2	3	4	1	2	3	4
Desert ULCANS P31 MDR								
MSCS- ME MS I/II								
Snow ULCANS P31 MDR								
EO Signature Enhancements ULCANS								
P31 MDR								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development		February 1995	DL42
<u>A. Project Cost Breakdown</u>					
Government Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997
Contractor Engineering Support		0	0	520	400
Developmental Test and Evaluation		0	0	494	395
Travel		0	0	200	150
Miscellaneous		0	0	56	30
Total		0	0	20	20
				1290	995

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 1995**

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604804A Logistics And Engineer Equipment

Engineering Development

	COST (In Thousands)	Fiscal Year								Total Cost
		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	
D194 Engine Driven Generators Engineering Development		1508	1888	833	299	270	286	719	723	Continuing

C. Other Program Funding

OPA, BA3, Other Support Equipment
MA9800, Generators and Associated Equip

D. Schedule Profile

Award contracts for fabrication/testing for a 5 kW 28VDC (APU).

Complete the test phase of Foreign

Comparative Test program for LT 3 kW program.

**Complete cold weather starting kit program
for Tactical Quiet Generator (TOG) sets.**

**Complete design and down-select 5 kW
28 VDC APU.**

Initiate testing 5 kW 28

VDC APU.

Begin fabrication of 5 kW 28VDC APU

Production Qualification Test (PQT)

models.

Begin testing of 5 kW 28VDC APU PQT models.

[illegible]

X*

✕

X

X

X

X

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604804A Logistics And Engineer Equipment Engineering Development

PROJECT

D194

	FY 1994	FY 1995	FY 1996	FY 1997
Complete fabrication of 5 kW 28 VDC PQT Models.	1 2 3 4	1 2 3 4		
Complete testing of 5 kW 28VDC APU PQT models.			X	
Complete preparation of formal program review of 5 kW 28 VDC APU.				X
Begin development of 3 kW (TQG)			X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						
BUDGET ACTIVITY		PE NUMBER AND TITLE		DATE	PROJECT	
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development		February 1995	D194	
A. Project Cost Breakdown						
	FY 1994	FY 1995	FY 1996	FY 1997		
Primary Hardware Development	900	1168	400			
Test and Evaluation		200	200	150		
Government Engineering and Support	306	300	70	49		
Program Management	150	100	75	60		
Miscellaneous	150	221	88	40		
Total	1506	1989	833	299		
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government	Method/Type	Award or Obligation	Date	9406		
Performing Activity	Vehicle	CPFF				
Product Development Organizations						
Contractors Various	CPFF					
Support and Management Organizations	None					
Test and Evaluation Organizations	None					
Miscellaneous:						
CECOM	In-House	Various	NA	N/A		
TECOM	MIPR	Various				
SBIR/STTR						
Project TOTAL						
Government Furnished Property	NONE					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604804A Logistics And Engineer Equipment

Engineering Development

PROJECT

D279

D279	Airdrop Equipment Engineering Development	COST (in Thousands)									Total Cost
		FY 1984 Actual	FY 1985 Estimate	FY 1986 Estimate	FY 1987 Estimate	FY 1988 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Continuing
		4462	1487	1463	1486	1502	1507	1548	1546	Continuing	Continuing

C. Other Program Funding Summary

RDTE, A Budget Activity 4

PE 0603804A Project D266 Airdrop Equip Adv Development

NOTE: Camouflage is a Defense Business Operating Fund (DBOF) production item.

D. Schedule Profile

	FY 1994		FY 1995		FY 1996		FY 1997	
	1	2	3	4	1	2	3	4
Complete TT/OT of single unit 60,000k lb airdrop system				X*				
Complete Technical/User tests of 60,000k lb linked platform airdrop system								
Conduct technical/ User tests of GPADS- light								
Award development contract for GPADS- medium								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development									D279
A. Project Cost Breakdown											
Primary Hardware Development		FY 1994	FY 1995	FY 1996	FY 1997						
Program Management Support		3211	1017	985	995						
Test and Evaluation		530	185	185	185						
Miscellaneous		721	254	330	323						
Total		4462	31	1493	1496						
B. Budget Acquisition History and Planning Information											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations											
Natick, E-Systems, A.D. Little, Metric Corp., ARO											
Support and Management Organizations											
Natick, GTS, GEO Centers											
Test and Evaluation Organizations											
TECOM, EGLIN AFB, ABSOTD. Miscellaneous SBIR/STTR											
Subtotal Product Development											
Subtotal Support and Management											
Subtotal Test and Evaluation											
Subtotal Miscellaneous											
Total Project											
Government Furnished Property: NONE											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development		
	PROJECT D429		

A. <u>Project Cost Breakdown</u>				
	FY 1994	FY 1995	FY 1996	FY 1997
Primary Hardware Development	2330	1516	1486	1577
Program Management Support	1000	900	518	900
Test and Evaluation	1513	1089	866	900
Miscellaneous		76		
Total	5043	3581	2870	3377

B. <u>Budget Acquisition History and Planning Information</u>													
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994		FY 1995		FY 1996		Budget to Complete	Total Program
						FY 1994	FY 1994	FY 1995	FY 1995	FY 1996	FY 1996		
Performing Organizations													
Product Development Organizations													
Natick, Gichner, Brunswick, DBA					9128	2530	1592	1486	1577	Cont	Cont		Cont
Support and Management Organizations					3651	1000	900	518	900	Cont	Cont		Cont
Natick, GTS, GEO Centers													
Test and Evaluation Organizations													
TECOM, CSTA, YPG, TEXCOM					3477	1513	1013	866	900	Cont	Cont		Cont
Miscellaneous BIR/STTR					0	0	76	0	0	0	0		0

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					
BUDGET ACTIVITY	PE NUMBER AND TITLE	FY 1994	FY 1995	FY 1996	FY 1997
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development				
		9128	1592	1486	1577
Subtotal Product Development		3651	900	518	900
Subtotal Support and Management		5477	1089	866	900
Subtotal Test and Evaluation		18,256	3581	2870	3377
Total Project					
Government Furnished Property: None					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604804A Logistics And Engineer Equipment Engineering Development								D461	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D461	Marine Oriented Logistics Equipment Engineering Development	0	2784	348	0	0	0	0	0	Continuing	Continuing
C. Other Program Funding Summary											
OPA, BA3, Other Support Equipment		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
M32400 Floating Crane					14900	14913	14914				44727
M44500 Pusher Tug				3576	7152	7158					17886
MA0900. LARC-60 SLEP								6959	6960	0	13919
D. Schedule Profile											
1	Pusher Tug Milestone I/III	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 1997	
	Contract Award	2	3	4	1	2	3	4	1	2	3
	Material Release					4	1				4
						X					
								X			
	Floating Crane Mission Need State										
	Milestone I/III								X		
	Contract Award									X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment Engineering Development	D461	
A. Project Cost Breakdown			
Contractor Engineering Support (includes test & evaluation)		FY 1994	FY 1995
Program Management Support			FY 1996
SBIR/STTR (FY 95)			FY 1997
Total			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

5 Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604805A Cmd, Cntrl, Comm Systems Engr Dev

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	8971	11237	13432	13842	6808	6894	0	0	Continuing	Continuing
D097 C-3I Interoperability Network Activity	1834	1850	1782	1776	1762	1747	0	0	Continuing	Continuing
D098 Tactical Radio Accessories	1218	0	195	597	597	597	0	0	0	4989
D282 SINGGARS-V Engineering Development	1712	4535	7393	7280	0	0	0	0	0	Continuing
D485 C-4I Interoperability Standardization and Certification	0	78	498	498	497	498	0	0	Continuing	Continuing
D486 Tactical Net Radio Communications	4207	4774	3564	3691	3952	4052	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: In support of the Army Enterprise Strategy, achieve interoperability within the Army and with the Joint/Combined forces, this program includes Engineering and Manufacturing Development (EMD), interoperability evaluation of Army command, control, communications and intelligence (C3I) systems and equipment, and the supporting interoperability facilities. Included is engineering development of life-cycle capability to develop, test, and maintain interoperability, and support an interoperability development and evaluation process consisting of an Army interoperability board and technical management to ensure maximum horizontal and vertical integration for Army battlefield digitization. Also included is the Army portion of engineering development efforts in support of the Combat Survivor Evader Locator System (CSEL). This includes the Single Channel Ground and Airborne Radio System (SINGGARS) product improvements identified in the SINGGARS System Improvement Plan; the Frequency Hopping Multiplexer (FH MUX) which allows multiple radios to operate on one antenna for reduced visual signature and rapid transportability; and set-up, and follow on programs to demonstrated technologies evolving from Wireless Network Access, Communications Network Planning and Management and initiatives to establish a Multiband Radio Integrated testbed. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition process and are therefore correctly placed in Budget Activity 5.

Project D097 - C3I Interoperability Network Activity: Provide a suite of distributed communications, sites, and services (Army Interoperability Network - AIN) supporting Army C3I systems throughout the life-cycle, which provides the capability to develop, test, and maintain interoperability, and support a continuous life-cycle interoperability development and evaluation process through remote access to the actual C3I systems and test evaluation facilities. Enable engineering solutions that replicate battlefield configurations by networking dispersed C3I systems, creating the environments needed to identify, isolate, and resolve interoperability problems, evolve interoperability standards and protocols, and support testing required to meet the DOD interoperability objectives. Provide the connectivity for achieving horizontal and vertical integration, and initiatives such as C4I for the Warrior, Louisiana, Maneuvers, Battle Labs Process, Digitizing the Battlefield (Force XXI), and Life-Cycle Software Engineering.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 Engineering And Manufacturing Development		
FY 1994 Accomplishments:		
<ul style="list-style-type: none"> • Began AIN Block-1 Development (supports emerging C4I interoperability test evaluation requirements) (988) • Installed two new remote field command and control (C2) interoperability sites (395) • Supported JCS' C4I for the Warrior and interservice tactical switch interoperability (90) • Supported interoperability development, testing, and sustainment of Army's C4I systems (PEOs, PMs, CECOM and fielded systems) (361) 		
FY 1995 Planned Program:		
<ul style="list-style-type: none"> • Integrate AIN Block-1 Capabilities into Task Force XXI sites (835) • Develop Rapid deployment AIN Video Teleconferencing (VTC) communications package (106) • Support PEOs, PMs, and CECOM in achieving systems Army/Joint interoperability, C4I certification testing and DOD policy objectives (190) • Continue to support Joint Chiefs of Staff (JCS) C4I for the Warrior, and interservice tactical switching, and other Army Interoperability programs (75) • Install two remote field support sites (390) • Begin compliance and interoperability testing support for Task Force XXI system implementations (215) • Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR) (39) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> • Enhance AIN Block-1 capabilities to support Force XXI and Force XXI sites (645) • Evolve AIN protocol test capabilities to support Force XXI requirements (200) • Develop rapid deployment AIN broadcast and non-RF communications capability (392) • Provide compliance and interoperability testing support for Task Force XXI system implementations (295) • Continue to support Army's interservice tactical switching and other Army interoperability programs (75) • Support PEOs, PMs and CECOM in achieving systems Army/Joint interoperability C4I certification testing and DOD policy objectives (175) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> • Complete AIN Block-1 capabilities and integration. (675) • Evolve AIN protocol test capabilities to support Force XXI requirements (190) • Install two remote field support sites (395) • Provide compliance and interoperability testing support for Force XXI and Force XXI system implementations (291) • Continue to support Army's interservice tactical switching and other Army interoperability programs (75) • Support PEOs, PMs, and CECOM in achieving systems Army/Joint interoperability, C4I certification testing and DOD policy objectives. (150) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 Engineering And Manufacturing Development	0604805A Cmd, Cntrl, Comm Systems Engr Dev	
<p>Project D098 - Tactical Radio Accessories: In FY94, this project funds development of radio improvements resulting from emerging technologies. This includes the SINGGARS Forward Error Correction design improvements, part of the SINGGARS System Improvement Plan (SIP) which reduces bit error rate data messages throughout the battlefield, while providing the necessary traffic isolation between SINGGARS data nets needed to maximize the available throughput. It will provide both a voice and data Gateway to the Area Common User System (ACUS). In FY 95 these efforts transition to Project D282 contained within this Program Element. Improvements will be incorporated into the current production of the airborne radio via Engineering Change Proposal (ECP) cut-in to the current production line beginning in FY 96. In FY 96, this project will provide for development efforts for the Combat Survivor Evader Locator System (CSEL), a joint program led by the Air Force. This program will provide service, joint, and/or composite operational recovery rescue forces with the capability to pinpoint the location of and establish communication with downed personnel in need of extraction from hostile territories. The CSEL system will include the capability to pass data directly into the standard warfighter command, control, communications, computer, and intelligence (C4I) systems envisioned by the C4I for the Warrior Concept. The user's equipment will consist of a small hand-held unit used for geopositioning, Over the Horizon data communications, and two-way Line of Sight voice communications.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Initiated design plans for airborne SIP development (220) • Finalized airborne system definition (aircraft/receiver-transmitter interface) (100) • Initiated core hardware development (898) <p>FY 1995 Planned Program: Program unfunded in FY 1995</p> <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Support Air Force development efforts on the CSEL program (195) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Support Air Force development efforts on the CSEL program (597) <p>Acquisition Strategy: The joint Air Force led acquisition strategy is to pursue a modified Non-Developmental Item (NDI) approach for the hand-held unit and award a production contract beginning in FY 99.</p> <p>Project D282 - SINGGARS-V Engineering Development: This program provides for analysis and implementation of overall product improvements to the SINGGARS Combat Net Radio. Product improvements included are Global Positioning System (GPS) interfaces, Airborne Battlefield Combat Identification System (BCIS), Forward Error Correction (FEC) (data transmission enhancement techniques), improved data capability, weight reduction (to include a Half-size Receiver-Transmitter, Battery Box and Vehicular Applique), MANPRINT (ease of operations), vehicular system re-engineering, improved electronic counter-counter measure (ECCM) performance and switched system dial up interfacing. Program provides simplified operations, improved performance of existing capabilities, new operational capabilities and reduced life cycle costs.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 Engineering And Manufacturing Development		0604805A Cmd, Cntrl, Comm Systems Engr Dev
FY 1994 Accomplishments: <ul style="list-style-type: none"> Continued development of SINGGARS GPS interface and FEC hardware/development for ITT (1030) Conducted design verification testing for FEC for ITT (636) Conducted field demonstration of GPS/FEC prototype models (26) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> Initiate design feasibility study for an ITT SINGGARS Half-Size radio as part of the planned SIP program (1000) Initiate design feasibility study for a General Dynamics (GD) SINGGARS Half-Size radio as part of the planned SIP program (1000) SIP Engineering Support (1000) Initiate development of Airborne BCIS (1204) Program Management Support (135) Continue hardware and software compatibility testing with aircraft integrators (100) Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR) (96) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> Airborne BCIS Demonstration (400) Initiate development effort for ITT SIP Half Size radio (3415) Initiate development effort for GD SIP Half Size radio (3415) Program Management Support (163) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> Complete development effort for ITT SIP Half Size radio (3390) Complete development effort for GD SIP Half Size radio (3390) Complete design verification testing/demonstrations for both ITT and GD Half Size Radios (500) 		
<p>Acquisition Strategy: The Half-size Receiver-Transmitter and associated items planned development design products will be used by competitive producers as a part of the anticipated FY 97 production buyout of the SINGGARS radio.</p>		
<p>Project D485 - C4I Interoperability Standardization and Certification: The Army Enterprise Strategy, DOD 4630.5, DODI 4630.8, C4I for the Warrior, and CJSCI 6212.01, mandate the establishment and sustainment of interoperability between Army C4I systems, and within the Army and Joint/Allied C4I communities. This includes operation of the Army board to synergize and integrate the Army's interoperability certification testing and analysis, and configuration management functions. Provide the Army focal point for the review, staffing, coordination and development of Army positions for the interface interoperability standards and specifications. Direct the integration of the Army systems' requirements and operational concepts documents with the joint standards and interface documents. Included is the Army's participation</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 Engineering And Manufacturing Development	0604805A Cmd, Cntrl, Comm Systems Engr Dev	February 1995
in Joint/Allied and intra-Army interoperability certification testing and the Army's representation in the Joint/Allied Configuration Management Process. This is a restructure of project D488, and not a new start.		
FY 1994 Accomplishments: Efforts funded under PE 0604805A, Project D488		
FY 1995 Planned Program:		
<ul style="list-style-type: none"> Continue to Implement Army Five Year Interoperability Assurance Plan (FY1AP) to manage Army Interoperability testing requirements (76) SBIR (2) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> Continuation of Army FY1AP implementation ('120) Staff, consolidate, and formulate Army Interface Change Proposals (ICPs) (200) Review ICP test results and represent the Army at joint test meetings (178) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Continuation of Army FY1AP implementation (120) Staff, consolidate, and formulate Army Interface change proposals (200) Review ICP test results and represent the Army at joint test meetings (178) 		
Acquisition Strategy: The efforts funded within this project are non-system specific, therefore no Acquisition Strategy is provided.		
Project D488 - Tactical Net Radio Communications: Develops the Frequency Hopping Multiplexer which allows multiple radios to operate on one antenna for reduced visual signature and rapid transportability and set-up. Performs procedural interoperability testing and provides the Army's gateway to interoperability test network for certification of Army C3I systems. Develops Wireless Network Access (WNA) to provide Comm interface to CHS host computers and transmission security for tactical operations. Provide for executive agent and requirements for test and evaluation of the Joint Task Force Comm Planning and Management System.		
FY 1994 Accomplishments:		
<ul style="list-style-type: none"> Completed development effort on the FH MUX (1439) Conducted design verification test on the FH MUX using development models (333) Initiated pilot (pre-production) FH MUX model fabrication(225) Prepared, coordinated, processed, and approved 340 Interface Change Proposals (ICPs), Convened 4 Army Configuration Control Boards (CCBs), Provided Army voting principal at 26 Joint/Combined review panels (1044) Participated in 28 Army/Joint interoperability tests and provide Army voting principal at joint certification forums (627) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 Engineering And Manufacturing Development	0604805A Cmd, Cntrl, Comm Systems Engr Dev	
<ul style="list-style-type: none"> Developed simulation/stimulation message drivers, analyzers and data reduction tools for testing interoperability (219) Initiated implementation of Army Five Year Interoperability (FYIAP) to manage Army interoperability testing requirements (320) 		
FY 1995 Planned Program:		
<ul style="list-style-type: none"> Complete pilot (pre-production) model fabrication (4529) Conduct operational test and evaluation on the FH MUX (30) Conduct Design Verification Testing (120) SBIR/STTR (95) 		
FY 1996 Planned Program:		
<ul style="list-style-type: none"> Complete Pre-Production Qualification FHMUX (Design Verification) testing (955) Prepare, complete and submit technical reports and documentation in support of FH MUX pre-production model fabrication(245) Ensure development of prototypes for COMM network management systems that meets Joint Task Force Comm Management Planning System requirements (800) Develop new applications for improved spectrum efficiency (800) Conduct Demonstration of initial Multiband Radio Integration testbed (764) 		
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Develop prototype of Wireless Network Access (WNA) for test and evaluation. (951) Test prototype version 1 of Comm Network Management System (1000) Test high data radio for requirements of digitized battlefield (1000) Demonstrate interface of integration testbed to DIS2 and control capability to include automated test configuration. (740) 		
<p>Acquisition Strategy: The acquisition strategy for the FH MUX is to award a sole source contract for up to 50 FH MUX Pre-Production Qualification Test (PPQT) model units to Xetron Corporation, Cincinnati, OH, the current developer of the FHMUX. This contract is an essential preparatory phase to the planned full rate production contract scheduled for 3QFY96 and will provide substantial reduction in production risk.</p>		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1995
Appropriated Value	8906	11386
Adjustments to Appropriated Value	8906	11237
a. SBIR/STTR decrement (-135)	-135	
Current President's Budget Submit	8971	11237
		13432
		13842
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

5 Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604805A Cmd, Cntrl, Comm Systems Engr Dev

PROJECT

D097

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
C3I Interoperability Network Activity	1834	1850	1782	1776	1762	1747	0	0	Continuing	

C. Other Program Funding Summary: There are no other related RDT&E or other Appropriation efforts.

D. Schedule Profile: The efforts funded in this project are non-system specific, therefore no Milestones are provided.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 1995	PROJECT D097
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 Engineering And Manufacturing Development	0604805A Cmd, Cntrl, Comm Systems Engr Dev		
A. Project Cost Breakdown			
	FY 1994	FY 1995	FY 1996
Contractual Engineering Support	1239	1175	1107
Government Engineering Support	219	480	480
Development Test and Evaluation	369	150	150
Training	3	12	12
Travel	4	33	33
Total	1834	1850	1782
B. Budget Acquisition History and Planning Information: N/A			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
5 Engineering And Manufacturing Development					0604805A Cmd, Cntrl, Comm Systems Engr Dev					D098	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Tactical Radio Accessories	1218	0	185	597	597	597	0	0	0		
C. Other Program Funding Summary											
ARMY, OPA2 B03200	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost	
							18493	15214	30000	63708	
D. Schedule Profile											
CSEL Program	FY 1994			FY 1995		FY 1996			FY 1997		
Milestone I	1 2 3	4	1	2 3	4 1	2 3	4 1	1 2	3 4		
Milestone II				X							
Award NDI Development Contract									X		
Conduct IOT&E - FY 98											
Milestone III - FY 99											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY		PE NUMBER AND TITLE				DATE	PROJECT		
5 Engineering And Manufacturing Development		0604805A Cmd, Cntrl, Comm Systems Engr Dev				February 1995	D098		
A. Project Cost Breakdown									
Contractor Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997				
Total		1218	0	195	597				
		1218		195	597				
B. Budget Acquisition History and Planning Information									
Performing Organizations									
Contractor or	Contract								
Government	Method/Type	Award or	Performing						
Performing	or Funding	Obligation	Activity						
Activity	Vehicle	Date	EAC						
Product Development Organizations									
TBD	TBD	Jun 96	TBD						
Support and Management Organizations: None									
Test and Evaluation Organizations: None									
Government Furnished Property N/A									
Subtotal Product Development									
Subtotal Support and Management		1775	1218	195	597	1204	4989		
Subtotal Test and Evaluation									
Total Project		1775	1218	195	597	1204	4989		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE February 1995

BUDGET ACTIVITY

BUDGET ACTIVITY

PE NUMBER AND TITLE

0604805A Cmd, Cntrl, Comm Systems Engr Dev D282

PROJECT

ur Dev D282

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
SINGARS-V Engineering Development	1712	4535	7363	7280	0	0	0	0	0	

C. Other Program Funding Summary

**RDTE, A Budget Activity 5
PE 0604805A Project D098
Army OPA2, SSN: B00500
Army OPA2, SSN: J30500**

FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
1218	0	195	597	597	597	0	0	0	
314121	330214	284098	217863	184951	131212	153932	164072	0	Cont
20516	20818	12580	12603	0	0	0	0	0	Cont

D. Schedule Profile

**ECP Cut In to Ground Production
Award Airborne SIP Development
Contract
ECP Cut In to Airborne Production
Complete Design Feasibility Study on
Half Size radio
Award Half-Size Development Contracts**

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY			PE NUMBER AND TITLE			DATE		PROJECT	
5 Engineering And Manufacturing Development			0604805A Cmd, Cntrl, Comm Systems Engr Dev			February 1995		D282	
A. Project Cost Breakdown									
Contractor Engineering Support			FY 1994	FY 1995	FY 1996	FY 1997			
Developmental Test & Evaluation			1686	4435	7393	6780			
Total			26	100	0	500			
			1712	4535	7393	7280			
B. Budget Acquisition History and Planning Information									
Performing Organizations									
Contractor or	Method/Type	Award or	Performing	Project	Total				
Government	or Funding	Obligation	Activity	Office	Prior to				
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete
Product Development Organizations									
ITT Ft Wayne, IN	SS/CPFF	Oct 94	TBD	4941	1686	1255	1000	1000	4941
GD, Tallassee, FL	SS/CPFF	Dec 94	TBD	7213		300	3415	3408	7123
ITT Ft Wayne, IN	SS/CPFF	Jan 95	TBD	8365	0	2880	2978	2372	0
Support and Management Organizations: None									
Test and Evaluation Organizations									
White Sands, NM	MIPR	Nov 94			26	100		500	26
EPG, MD	MIPR	TBD							600
Government Furnished Property: N/A									
Subtotal Product Development									
Subtotal Support and Management					1686	4435	7393	6780	20294
Subtotal Test and Evaluation					26	100		500	626
Total Project					1712	4535	7393	7280	20920

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 Engineering And Manufacturing Development										D485	
PE NUMBER AND TITLE										0604805A Cmd, Cntrl, Comm Systems Engr Dev	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
C4I Interoperability Standardization and Certification	0	78	498	498	497	498	0	0	Continuing		

C. Other Program Funding Summary: There are no other related RDT&E or other Appropriation efforts.

D. Schedule Profile: The efforts funded are non-system specific, therefore no Milestones are provided.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 Engineering And Manufacturing Development	0604805A Cmd, Cntrl, Comm Systems Engr Dev	D485	
A. Project Cost Breakdown			
Government Engineering Support		FY 1994	FY 1995
Total		78	498
B. Budget Acquisition History and Planning Information: N/A			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 Engineering And Manufacturing Development										D488	
PE NUMBER AND TITLE										0604805A Cmd, Comm Systems Engr Dev	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Tactical Net Radio Communications	4207	4774	3564	3681	3652	4052	0	0	Continuing		
C. Other Program Funding Summary:											
OPA2, SSN BA1205	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	To	Total Cost
			24803	32885	27013	0	0	0	0	0	84701
D. Schedule Profile											
1	FY 1994			FY 1995		FY 1996		FY 1997			
	2	3	4	1	2	3	4	1	2	3	4
	X*	X*									
	X*		X*								
FH MUX J&A Approved											
FH MUX AP Approved											
DT&E COMPLETE											
F1 MUX OT Complete											
Nilestone III - FH MUX											
Delivery FH MUX PPQ Units											
F1 MUX Production Award											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
5 Engineering And Manufacturing Development		0604805A Cmd, Cntrl, Comm Systems Engr Dev		D488	
A. Project Cost Breakdown					
Contractor Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997
Ancillary Hardware Development		2798	4035		
Developmental Test and Evaluation		333	200	894	1036
Operational Test and Evaluation			539	1240	1323
Government Engineering Support		682		787	925
Research Support Equipment Acquisition		96			
Travel		39		214	148
Training		4			
Miscellaneous		255		429	259
Total		4207	4774	3564	3691
B. Budget Acquisition History and Planning Information: N/A					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE
BUDGET ACTIVITY										February 1995
PE NUMBER AND TITLE										
5 - Engineering And Manufacturing Development										
0604806A NBC Defense Systems - Engineer Development										
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	42455	19510	0	0	0	0	0	0	0	Continuing
DF97 NBC Decontamination Systems	0	991	0	0	0	0	0	0	0	Continuing
D017 NBC Protection Systems	170	9050	0	0	0	0	0	0	0	Continuing
D020 NBC Contamination Avoidance Systems	42285	9469	0	0	0	0	0	0	0	Continuing
<p>A. Mission Description and Budget Item Justification: U.S. Forces must survive and sustain operations on the Nuclear, Biological and Chemical (NBC) contaminated battlefield. This program element supports the Engineering and Manufacturing Development (EMD) of NBC defensive equipment and addresses various shortcomings identified in Conduct of the Persian Gulf War: Final Report to Congress, April 1992. Projects provide for development and demonstration testing of individual and collective protection equipment such as the XM45 Aircrew Protective Mask (ACPM); radiological detection and monitoring equipment; an array of chemical/biological/toxin detection and warning systems to include the Multi-Purpose Integrated Chemical Agent Detector (MICAD), the XM22 Automatic Chemical Agent Alarm (ACADA), the CB Mass Spectrometer (CBMS), and the XM93E1 Fox NBC Reconnaissance Systems (NBCRS); and, finally, decontamination solutions and equipment to replace currently logistically burdensome and time consuming decon methods. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.</p> <p>This program was transferred to a Defense Program Element (PE 0604384BP) starting in FY 96 pursuant to Congressional direction in Public Law 103-160, Title XVII.</p> <p>Project DF97 - NBC Decontamination Systems: Provides EMD of new NBC decontamination solutions and equipment.</p> <p>FY 1994 Accomplishments: No planned program</p> <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> Continue Sorbent Decon formulation and applicator design (570) Initiate/complete Sorbent Decon Engineering Design Test (EDT) (400) SBIR/STTR (21) <p>FY 1996 Planned Program: Program transferred to PE 0604384BP/DF97.</p>										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604806A NBC Defense Systems - Engineer Development	
<p>FY 1997 Planned Program: Program transferred to PE 0604384BP/DF97.</p> <p>Project D017 - NBC Protection Systems: Provides EMD of equipment to protect soldiers on NBC contaminated battlefields. The project resources development of the XM45 Aircrew Protective Mask (ACPM) which provides rotary-wing air crewmen with a less burdensome respiratory protection system. The ACPM eliminates the air crew dependence on forced air and is compatible with helicopter weapon sights and night vision system. This project also supports the Advanced Integrated Collective Protection System (AICPS) which integrates NBC filtration environmental controls and power source components for combat systems and exploits new filtration technology. The AICPS can be integrated into multiple configurations to provide protection to several different tactical systems. Also supports the M40 Mask Pre-Planned Product Improvement and the M20 Collective Protection System Pre-Planned Product Improvement. The AICPS program is supported by the Counterproliferation Initiative in FY 1995 (PE 0604384BP/CP05)</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • M20P3I - Contract Closed-Out (60) • M40P3I - Developed Ballistic Protection (110) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • AICPS - Initiate design configuration testing (769) • AICPS - Initiate prototype fabrication (1911) • AICPS - Conduct preliminary/critical design reviews. (3900)¹ • AICPS - Develop prototype filter (300)¹ • ACPM - Complete Hardware Design and build for Engineering Design Test (EDT), and Preproduction Qualification Test (PPQT) (2880) • ACPM - Conduct EDT and prepare PPQT test plans, procedures and fixtures (1250) • ACPM - Purchase Technical Data Package (TDP) tooling and develop logistics support (2050) • SBIR/STTR (190) <p>¹ Counterproliferation funding support.</p> <p>FY 1996 Planned Program: Program transferred to PE 0604384BP/DO17.</p> <p>FY 1997 Planned Program: Program transferred to PE 0604384BP/DO17.</p> <p>Project D020 - NBC Contamination Avoidance Systems: This project provides for the Engineering and Manufacturing Development (EMD) of new nuclear and chemical defensive equipment to enhance U. S. capability to detect and identify threat agents on the battlefield. The project supports: (1) Automatic Chemical Agent</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604806A NBC Defense Systems - Engineer Development		
<p>Detector Alarm (ACADA), which is more sensitive and responsive than current detectors and is capable of concurrent nerve and blister agent detection; (2) Multipurpose Integrated Chemical Agent Alarm (MICAD) which automates NBC warning and reporting throughout the battlefield and links digital data into the Army's command, control and communications systems; (3) the XM93E1 FOX NBC Reconnaissance System (NBCRS), which is a dedicated system of NBC detection, warning, and sampling equipment integrated into a high speed, wheeled, high mobility armored carrier capable of performing NBC reconnaissance on primary, secondary, or cross country routes throughout the battlefield; (4) AN/UJDR-13 Pocket Radiac Set which provides ground troops with a lightweight, user-friendly tactical device for measuring and detecting radiation; (5) Advanced Airborne Radiac System (AARS) to provide rapid, accurate, and safe measurement of radiation from the air and for correlating airborne readings to ground radiation readings and positions; and (6) CB Mass Spectrometer (CBMS) which identifies all chemical and biological agents collected and is a component of the NBCRS and Biological Integrated Detection System (BIDS); and (7) Biological Detector (BD), a point detector for threat biological agents which is also a component of the BIDS and is under management of the Joint Program Office for Biological Defense (JPO-BIO).</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> ACADA - Completed inventory delivery and data item submission on Environmental Technologies Group, Inc. contract (3899) ACADA - Initiated Comparative Testing and Evaluation of ACADA/Non Developmental Item (NDI) (1200) ACADA - Conducted Market Survey (810) MICAD - Conducted Preliminary Design and Review (5000) MICAD - Conducted Hardware Critical Design and Review (1500) MICAD - Conducted Software Design and Phase I Review (1597) NBCRS - Completed Initial Operational Test & Evaluation (IOT&E) (4000) NBCRS - Completed Pre-Production Qualification Testing (PPQT) (2000) NBCRS - Prepared MS III IPR Documentation (100) NBCRS - Prepared Technical Manuals for IOT&E (3000) NBCRS - Performed Failure Analysis (1000) NBCRS - Refurbished systems after Technical Test (TT) in preparation for IOT&E (1200) NBCRS - TDP updated and change incorporated (3000) NBCRS - Finalized logistics provisioning, packaging and manuals (5000) NBCRS - Conducted configuration control and change management (2825) POCKET RADIAC - Completed design and fabrication of P-Channel metal oxide semi-conductor field effect transistors (PMOFT) for prototype (200) POCKET RADIAC - Prepared test plans and conducted Nuclear Performance Testing (70) POCKET RADIAC - Conducted test and evaluation of PMOFT, prototype evaluation and development of alternative dissimetric elements (1223) AARS - Designed installation mounts to install AN/UJDR-2 with interface board into OH58D helicopter (1752) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																					
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995																					
5 - Engineering And Manufacturing Development	0604806A NBC Defense Systems - Engineer Development																						
<p>FY 1994 Accomplishments (continued):</p> <ul style="list-style-type: none"> AARS - Conducted software development and testing (1109) JPO BIO - Initiated engineering analysis for Bio Detection kit integration into BIDS (1741) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> NBCRS - Complete EMD and production planning for Block I upgrade (6575) NBCRS - Complete MS III IPR Documentation and hold IPR (200) NBCRS - Conduct Operational MANPRINT Demonstration (800) ACADA - Close out of Program and Engineering Manufacturing Development Contract (200) ACADA - Initiate and Conduct Non-Development Item (IDI) Contract (800) ACADA - Prepare Production Contract and IPR Program Documentation (200) Pocket Radiac - Conduct Preproduction Qualification Test (PPQT) (450) Pocket Radiac - Finalize system design after PPQT (50) SBIR/STTR (194) <p>FY 1996 Planned Program: Program transferred to PE 0604384BP/DO20.</p> <p>FY 1997 Planned Program: Program transferred to PE 0604384BP/DO20.</p> <p>B. Program Change Summary:</p> <table border="0"> <thead> <tr> <th></th> <th>FY 1994</th> <th>FY 1995</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget</td> <td>42839</td> <td>13474</td> </tr> <tr> <td>Appropriated Value</td> <td>42839</td> <td>19510</td> </tr> <tr> <td>Adjustments to Appropriated Value</td> <td>+16</td> <td></td> </tr> <tr> <td> a. Reprogrammed into PE (277)</td> <td></td> <td></td> </tr> <tr> <td> b. SBIR/STTR (-661)</td> <td></td> <td></td> </tr> <tr> <td>Current Budget Submit/President's Budget</td> <td>42455</td> <td>19510</td> </tr> </tbody> </table>				FY 1994	FY 1995	Previous President's Budget	42839	13474	Appropriated Value	42839	19510	Adjustments to Appropriated Value	+16		a. Reprogrammed into PE (277)			b. SBIR/STTR (-661)			Current Budget Submit/President's Budget	42455	19510
	FY 1994	FY 1995																					
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b. SBIR/STTR (-661)																							
Current Budget Submit/President's Budget	42455	19510																					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995																																																
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT																																																	
5 - Engineering And Manufacturing Development		0604806A NBC Defense Systems - Engineer Development								DF97																																																	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost																																																	
DF97 NBC Decontamination Systems	0	981		0	0	0	0	0	Continuing	Continuing																																																	
C. Other Program Funding Summary:																																																											
RDTE, A Budget Activity 2, PE 0602622A, Proj A553, CB Defense & General Investigations																																																											
D. Schedule Profile:																																																											
<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"></th> <th style="text-align: center;">FY 1994</th> <th style="text-align: center;">FY 1995</th> <th colspan="2" style="text-align: center;">To</th> <th colspan="2" style="text-align: center;">FY 1996</th> <th colspan="2" style="text-align: center;">FY 1997</th> <th colspan="2"></th> </tr> <tr> <th colspan="2"></th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td colspan="2" style="text-align: center;">Sorbent Decon - Initiate/Complete Engineering Design Test</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>														FY 1994	FY 1995	To		FY 1996		FY 1997						2	3	4	1	2	3	4	1	2	3	1		2	3	4	1	2	3	4	1	2	3	Sorbent Decon - Initiate/Complete Engineering Design Test								X			
		FY 1994	FY 1995	To		FY 1996		FY 1997																																																			
		2	3	4	1	2	3	4	1	2	3																																																
1		2	3	4	1	2	3	4	1	2	3																																																
Sorbent Decon - Initiate/Complete Engineering Design Test								X																																																			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - Engineering And Manufacturing Development	0604806A NBC Defense Systems - Engineer Development	DF97	
A. <u>Project Cost Breakdown:</u>			
Systems Engineering	FY 1994	FY 1995	FY 1996
Engineering Design Test		570	
SBIR/STTR		400	
Total		21	
		991	
B. <u>Budget Acquisition History and Planning Information:</u> Not Applicable			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY					DATE				
5 - Engineering And Manufacturing Development					February 1995				
PE NUMBER AND TITLE					PROJECT				
0604806A NBC Defense Systems - Engineer					D017				
Development									
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Total Cost
D017 NBC Protection Systems	170	9050	0	0	0	0	0	0	Continuing
C. Other Program Funding Summary:									
RDTE, A Budget Activity 2 PE 0602622A Project	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Total Cost
A553 CB Defense & General Investigations	35529	29614	0	0	0	0	0	0	Cont'd
RDTE, A Budget Activity 4 PE 0603806A Project	6318	1480	0	0	0	0	0	0	Cont'd
D604 NBC Protection Systems	0	15200	18800	10700	8500	12500	36500	29500	Cont'd
RDTE, D Budget Activity 5 PE 0604384BP									
Project CP05 Counterproliferation Support									
OPA-3, A Appropriation									
M97400, M20/M20E1 SCPE	1527	0	0	0	0	0	0	0	1527
SX8001, XM28 NBC TEMPER	4366	10236	0	0	0	0	0	0	14602
D. Schedule Profile:									
Conduct MSII IPR for ACPM	FY 1994		FY 1995						
Build EDT Hardware for ACPM	1 2 3	4 1 2 3 4							
Conduct EDT for ACPM		X*		X					
Initiate AICPS prototype fabrication					X				
Initiate AICPS Engineering Design Test						X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering And Manufacturing Development

0604806A NBC Defense Systems - Engineer

D017

Development

A. Project Cost Breakdown:

FY 1994 FY 1995

110 2005

Government Engineering Support

Contractor Engineering Support

Project Management Office

Hardware Development

Software Development

ILS

Technical Data

Testing

Design

Documentation

QA

Prototype Fabrication

Design configuration testing

SBIR/STTR

Total

2600

225

150

525

325

200

150

1911

769

190

9050

60

170

B. Budget Acquisition History and Planning Information:

Performing Organizations

Contractor or

Government

Performing

Activity

Product Development Organizations

CBDCOM

Unknown

Miscellaneous

Support and Management Organizations

CBDCOM

Test and Evaluation Organizations

Government Furnished Property: None

Method/Type

or Funding

Award or

Obligation

Date

Oct 94

Apr 95

Jan 95

Oct 93

Jun 95

None

Performing

Activity

EAC

3349

3486

625

720

850

850

Project

Office

EAC

3349

3486

625

720

850

850

Total

Prior to

FY 1994

FY 1994

FY 1995

FY 1995

FY 1995

FY 1995

Total

Program

3349

3486

625

720

850

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT
5 - Engineering And Manufacturing Development		0604806A NBC Defense Systems - Engineer Development		D017

	<u>FY 1994</u>	<u>FY 1994</u>	<u>FY 1995</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Total					
Prior to					
FY 1994	170		7290		7460
			720		720
			850		850
			8860*		9030
Subtotal Product Development					
Subtotal Support and Management					
Subtotal Test and Evaluation					
Total Project					

* Does not include SIBR/STTR (190)

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RD T&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE
	February 1995

5 - Engineering And Manufacturing Development

**0604806A NBC Defense Systems - Engineer
Development**

**PROJECT
D020**

COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D020	NBC Contamination Avoidance Systems	42285	9469	0	0	0	0	0	0	Continuing	Continuing

<u>FY 1994</u>	<u>FY 1995</u>	<u>Compl</u>	<u>Total</u>
21277	8623	Cont'd	Cont'd

RDTE, A Budget Activity 4 PE 0603806A Project
D601 NBC Contamination Avoidance Systems

**RDTE, D Budget Activity 7, PE 06073724D, Joint
Biological Defense Program**

**OPA-3, A Appropriation
M98800, ACADA XM22
M93000, BIDS**

	FY 1994				FY 1995			
	1	2	3	4	1	2	3	4
ACADA-Procure NDI Hardware				X*				
ACADA-Initiate Shoot-Off Testing				X*				
ACADA-Evaluate NDI Candidates				X*	X*			
ACADA-MS III IPR TC LRP						X		
ACADA-Prepare Acquisition Plan				X*		X		
ACADA-Prepare Production Contract							X	
ACADA-Award Production Contract							X	
ACADA - Conduct Market Survey/Test								
ACADA - Close out EMD Contract								
MICAD-Preliminary Design Rev		X*						X

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY					DATE				
5 - Engineering And Manufacturing Development					February 1995				
PE NUMBER AND TITLE					0604806A NBC Defense Systems - Engineer Development				
FY 1994					FY 1995				
1	2	3	4	1	2	3	4		
MICAD-Hardware Critical Design Rev									
MICAD-Software Design & Phase 1 Rev									
MICAD-Sample Transfer System Design			X*						
MICAD-Build Prototype Hardware									
MICAD-Conduct PPT									
XM93E1-Complete IOT&E		X*							
XM93E1-Complete PPQ ¹									
XM93E1-IER (UT)			X*						
XM93E1-MS III IPR				X					
XM93E1-Production Contract Award									
XM93-Begin Upgrade of Fielded Systems									
POCKET RADIAC-Build 1st Prototype					X				
POCKET RADIAC - Conduct PPQT			X*						
POCKET RADIAC - Conduct MSIII IPR							X		
POCKET RADIAC-Complete Dev							X		
AARS-Critical Design Review			X*						
AARS-Complete DT/OT Testing							X		
CBMS-Design									
CBMS-Test									
CBMS-Document									
Bio Detector Engineering Analysis									
			X*						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
5 - Engineering And Manufacturing Development		0604806A NBC Defense Systems - Engineer Development		D020	
A. Project Cost Breakdown:					
	FY 1994	FY 1995			
Government Engineering Support	12654	2030			
Contractor Engineering Support	15551	4280			
Project Management Office Support	3907				
Hardware Development	5056	50			
Software Development	2792				
ILS	1368	1215			
QA	500				
Technical Data	457				
Testing		1495			
Design					
Document		205			
SBIR/STTR		194			
TOTAL	42285	9469			
B. Budget Acquisition History and Planning Information:					
Performing Organizations					
Contractor or					
Government					
Performing					
Activity					
	Award or	Performing	Project	Total	
	Obligation	Activity	Office	Prior to	
	Date	EAC	EAC	FY 1994	
				FY 1994	
				FY 1995	
				Budget to	
				Complete	
				Total	
				Program	
Product Development Organizations					
GEN DYNA -LSD	Apr 94	102921	102921	84297	14344
SS/CPIF					
STC	Feb 94		581	400	181
CPIF					
CBDCOM	Oct 93		18348	11883	4100
TACOM	Jan 94		1900	700	600
PO					
STRICOM	Dec 93		175	1500	175
PO					
MISC			1500	1500	1500
PO			4652	1764	1688
CBDCOM	Oct 93				
		4652		1200	4652

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 - Engineering And Manufacturing Development										D020	
PE NUMBER AND TITLE										NBC Defense Systems - Engineer	
Development											
Contractor or	Award or	Performing	Project	Total	FY 1994	FY 1995	Budget to	Total			
Government	Obligation	Activity	Office	Prior to			Complete	Program			
Activity	Date	EAC	EAC	FY 1994							
LORAL-LIBRA	Jan 94	13527	13527	7127	6400	0		13527			
MISC		534	534	466	68	0		534			
ETG	Jan 94		30210	30210				30210			
Sandia Labs	Mar 94		210		200	10		210			
Modern Tech Corp	May 94	332	332		332			332			
Nuclear Rsch Corp	Mar 94	65	65		25	40		65			
Bell Heli- Textron	Mar 94	1922	1922		1922			1922			
MRDC	Dec 93	207	207		207			207			
NAVSEA	Apr 94	110	110		110			110			
Support and Management Organizations											
MISC	PO		16950	11800	5150			16950			
CBDCOM	PO		14947				14947	14947			
CECOM	PO	1554	1554		1554			1554			
ARL	PO		36		6	30		36			
Camber	SS/CPFF	426	426		426			426			
AAESA	MIPR	322	322		322			322			
SARDA	MIPR	223	223		223			223			
USA Chem School	MIPR	274	274		274			274			
JPO-BD	PO		579		579			579			
Test and Evaluation Organizations											
FT HOOD	MIPR		1750		1750			1750			
TECOM	PO		6322	3923	1649	750		6322			
Government Furnished Property:	None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development	0604806A NBC Defense Systems - Engineer Development	D020		
		FY 1994	FY 1995	Budget to Complete
				Total Program
Subtotal Product Development	138347	30352	8495	177194
Subtotal Support and Management		8534	30	35311
Subtotal Test and Evaluation	3923	3399	750	8072
Total Project	154070	42285	9275*	220577

*Does not include SIBR/STTR (194)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604807A Med Matl/Med Bio Def Equip Engr Dev

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	15665	12363	4736	4681	5166	5290	6707	6697	Continuing	Continuing
D812 Military Human Immunodeficiency Virus (HIV) Vaccine and Drug-Engineering Development	6205	6352	199	199	298	299	1998	1995	Continuing	Continuing
D832 Combat Medical Materiel-Engineering Development	2582	1595	1580	1754	1795	1921	1909	1906	Continuing	Continuing
D834 Soldier System Protection-Engineering Development	306	0	901	915	950	962	956	955	Continuing	Continuing
D847 Medical Biological Defense-Engineering Development	1278	0	0	0	0	0	0	0	0	1278
D848 Medical Chemical Defense Life Support Material *	1074	52	0	0	0	0	0	0	0	1126
D849 Infectious Disease Drug and Vaccine-Engineering Development	4220	4390	2048	2083	2123	2108	1844	1841	Continuing	Continuing

* Starting in FY 1996, funding has been consolidated into PE 0605384BP in accordance with P.L. 103-160.

A. Mission Description and Budget Item Justification: This engineering and manufacturing development program funds improved medical equipment and drugs essential to countering lethal and human performance degrading effects of chemical threats, infectious diseases and medical equipment essential to meeting medical requirements on the integrated battlefield with emphasis on decreased size/weight and high mobility, yet supporting large numbers of combat casualties. Additionally, foreign medical materiel may be procured for exploitation of advanced technology and development to meet Army medical defense goals. This program element supports the full-scale development of vaccines, prophylactic and therapeutic drugs, resuscitation fluids and drug products, rapid identification and diagnostic systems, arthropod vector repellent systems for the prevention of naturally occurring diseases, and Acquired Immune Deficiency Syndrome (AIDS). Starting in FY 1996, funding for chemical and biological defense medical research and development efforts (project D848) have been consolidated into PE 0605384BP in accordance with P.L. 103-160. Additionally, the program element funds engineering and manufacturing development of medical equipment which provides measurement of or protection against physiological, psychological or environmental factors which degrade physical performance. This includes engineering development of vision corrective devices for protective masks, environmental health monitoring equipment, and medical water quality monitoring equipment. This program is primarily managed by the U.S. Army Medical Research and Materiel Command. The projects in this Program Element support research efforts in the engineering and manufacturing development phase of the acquisition cycle and are therefore correctly placed in Budget Activity 5.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604807A Med Matl/Med Bio Def Equip Engr Dev	
<p>Project D812-Military Human Immunodeficiency Virus (HIV) Vaccine and Drug-Engineering Development: This project funds Congressionally mandated, militarily relevant HIV medical countermeasures. This provides for engineering and manufacturing of sufficient candidate vaccines and drugs to permit large-scale field testing and education/training materials. Efforts are directed to answer militarily unique needs affecting manning, mobilization and deployment. The major contractor is Henry M. Jackson Foundation for the Advancement of Military Medicine., Rockville, MD.</p>		
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Evaluated vaccines to treat or protect against HIV. (6205) 		
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Evaluate vaccines to treat or protect against HIV. (6219) • Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research program Reauthorization Act of 1992. (133) 		
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Evaluate vaccines to treat or protect against HIV. (199) 		
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Evaluate vaccines to treat or protect against HIV. (199) 		
<p>Project D832-Combat Medical Materiel-Engineering Development: This project supports engineering and manufacturing development to field new and improved medical materiel essential for combat casualty care to reduce logistical support requirements and minimize losses from duty rates. The major contractor is the Ohmeda Corp., Chicago, IL.</p>		
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Completed contract for a portable sterile water for injection system. (2395) • Completed study for fielding commercial liquid oxygen generators. (134) • Evaluated human efficacy data of Hypertonic Saline Dextran. (53) 		
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Reevaluate data and submit to FDA a New Drug Application for Hypertonic Saline Dextran. (32) • Contract for prototype armored ambulance medical interior concepts. (1144) • Conduct user testing of field medical oxygen generation and distribution system. (287) • Support the engineering development and user evaluation of telemedicine hardware and concepts for the treatment of combat casualties. (98) • Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research program Reauthorization Act of 1992. (34) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604807A Med Mat/Med Bio Def Equip Engr Dev
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Conduct milestone 3 In-Process Review of Hypertonic Saline Dextran. (124) • Fabricate armored ambulance prototype and prepare specifications. (758) • Monitor field medical oxygen generation and distribution system production contract. (58) • Conduct technical and user evaluations of the intraosseous infusion device. (357) • Support the engineering development and user evaluation of telemedicine hardware and concepts for the treatment of combat casualties. (298) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Conduct additional clinical trials and submit a supplemented New Drug Application for Hypertonic Saline Dextran. (189) • Monitor field medical oxygen generation and distribution system production and fielding. (58) • Conduct technical and user testing of far forward suction apparatus. (257) • Support the engineering development and user evaluation of telemedicine hardware and concepts for the treatment of combat casualties. (1250) <p>Project D834-Soldier System Protection-Engineering Development: This project supports engineering development of preventive medicine materiel, including devices, pharmacologicals and other tools, to provide protection, sustainment, and enhancement of the physiological and psychological capabilities of soldiers in the face of combat operations under all environmental conditions. Focus is on reduction in the incidence of personnel losses due to preventable disease and non-battle injuries through development of environmental and physiological performance monitors and other preventive medicine countermeasures. A major contractor is: Stanford Research Institute, Palo Alto, CA.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Provided optometry and engineering support in the design, fabrication and testing of special eyewear incorporated into protective masks. (306) <p>FY 1995 Planned Program: Project not funded</p> <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Provide optometric and engineering support for the development of corrective eyewear for application to other developers responsible for protective masks and aviation life support equipment. (901) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Provide optometric and engineering support for the development of corrective eyewear for application to other developers responsible for protective masks and aviation life support equipment. (915) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604807A Med Matl/Med Bio Def Equip Engr Dev	
<p>Project D847-Medical Biological Defense-Engineering Development: This project funds exploratory research on the development of vaccines and drugs to provide an effective medical defense against validated biological threat agents including bacteria, toxins, viruses and other agents of biological origin. By employing biotechnology, medical systems will be designed to rapidly identify, diagnose, prevent and treat disease due to exposure to biological threat agents.</p>		
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Prepared Product and Establishment License Application for tularemia vaccine. (82) • Completed development of Human Botulism Immune Globulin for contingencies. (258) • Tested and evaluated automated systems for rapid diagnosis of biological warfare agent exposure. (938) 		
<p>FY 1995 Planned Program: Project moved to PE 0208051A, project BD2, Joint Biological Defense-Medical.</p>		
<p>FY 1996 Planned Program: Project not funded.</p>		
<p>FY 1997 Planned Program: Project not funded.</p>		
<p>Project D848-Medical Chemical Defense Life Support Materiel: This project funds the development of medical materiel necessary to field an effective capability for medical defense against chemical agent threats facing U.S. forces in the field.</p>		
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted extended stability testing of the medical aerosolized nerve agent antidote, convulsant antidote for nerve agents, and nerve agent pretreatment pyridostigmine. (116) • Filed New Drug Application for nerve agent pretreatment, pyridostigmine with FDA. (958) 		
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct extended stability testing of the medical aerosolized nerve agent antidote, convulsant antidote for nerve agents, and nerve agent pretreatment pyridostigmine. (51) • Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research program Reauthorization Act of 1992. (1) 		
<p>FY 1996 Planned Program: Project moved to DoD PE 0605384BP.</p>		
<p>FY 1997 Planned Program: Project moved to DoD PE 0605384BP.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604807A Med Matl/Med Bio Def Equip Engr Dev	
<p>Project D849-Infectious Diseases Drug and Vaccine-Engineering Development: This project funds engineering and manufacturing development of sufficient candidate medical countermeasures to permit large-scale field testing and complete studies required for FDA licensure. Work performed in laboratories and among troop populations is directed to prevention, diagnosis, and treatment of viral, bacterial and parasitic diseases, so as to prevent casualties, sustain operational performance and minimize deaths and disability of armed forces during military operations.</p>		
<p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted field trial for whole cell/B subunit cholera vaccine. (1191) • Completed lot trials on Argentine Hemorrhagic Fever vaccine. (255) • Accelerated immunization schedule for Tick-Borne Encephalitis vaccine.(205) • Conducted challenge study for efficacy of cholera vaccine. (1262) • Conducted expanded Phase 1 clinical trials of Chikungunya live vaccine. (1307) 		
<p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Complete Phase 3 field study with cholera vaccine. (645) • Conduct efficacy study of schistosomal topical antipenetrant. (563) • Complete field study with whole cell/B subunit cholera vaccine. (1654) • Perform clinical testing of lyophilized Tick-Borne Encephalitis vaccine. (91) • Conduct expanded Phase 1/2 trials of Chikungunya live vaccine, Argentina, Hantaan and Rift Valley live vaccines. (693) • Complete Phase 3 field study and submit PLA for Hepatitis A inactive vaccine. (268) • Support the engineering development and user evaluation of telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases. (384) • Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research program Reauthorization Act of 1992. (92) 		
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Submit a Product License Application for the whole cell cholera vaccine. (100) • Conduct field trials of Hantaan, Chikungunya, live Shigella flexneri and Enterotoxigenic E. coli whole cell, and Rift Valley Fever live vaccines. (987) • Conduct safety and efficacy tests of the antimalarial drug Azithromycin. (961) 		
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Conduct field trials of malaria blood stage and Rift Valley Fever vaccines. (1057) • Conduct safety and efficacy tests of antimalarial drug Azithromycin (1036) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development	0604807A Med Mat/Med Bio Def Equip Engr Dev			
B. Program Change Summary				
Previous President's Budget	FY 1994	FY 1995	FY 1996	FY 1997
Appropriated Value	19569	12799	7394	7570
Adjustments to Appropriated Value	19569	12389		
a. SBIR/STTR (-303)	-3904			
b. Reprogramming total (-3601)				
Current President's Budget Submit	15665	12389	4738	4961

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995							
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT						
5 - Engineering And Manufacturing Development		0604807A Med Matl/Med Bio Def Equip Engr Dev		D812						
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D812 Military Human Immunodeficiency Virus (HIV) Vaccine and Drug-Engineering Development	6205	6352	199	199	298	298	1998	1995	Continuing	Continuing
<p>C. Other Program Funding Summary: Not Applicable</p> <p>D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY.</p>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY				DATE		PROJECT			
5 - Engineering And Manufacturing Development				February 1995		D812			
PE NUMBER AND TITLE									
0604807A Med Matl/Med Bio Def Equip Engr Dev									
A. Project Cost Breakdown									
Test & Evaluation	FY 1994	FY 1995	FY 1996	FY 1997					
Product Development	6102	6438	200	200					
Project Management	0	0	0	0					
Total	103	0	0	0					
	6205	6438	200	200					
B. Budget Acquisition History and Planning Information									
Performing Organizations									
Contractor or Contract									
Government	Method/Type	Award or	Performing	Project	Total				
Performing	or Funding	Obligation	Activity	Office	Prior to				
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete
Product Development Organizations: None									
Support and Management Organizations									
USAMMDA	NA	NA	NA	NA	83	0	0	0	0
Contracts	NA	NA	NA	NA	20	0	0	0	0
Test and Evaluation Organizations									
Army Laboratories	NA	NA	NA	NA	100	0	0	0	0
Contracts	NA	NA	NA	NA	1002	0	0	0	0
H.M. Jackson	C/Coop	Apr 93	125000	125000	38042	6438	200	200	Cont
Foundation	Agmt								
Government Furnished Property: None									
Subtotal Product Development									
Subtotal Support and Management					NA	0	0	0	Cont
Subtotal Test and Evaluation					NA	6438	200	200	Cont
Total Project					NA	6438	200	200	Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604807A Med Matl/Med Bio Def Equip Engr Dev								D832	
CO: T (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D832 Combat Medical Materiel-Engineering Development		2582	1585	1590	1754	1795	1921	1909	1906	Continuing	Continuing
C. Other Program Funding Summary: Not Applicable											
D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY											
		FY 1994		FY 1995		FY 1996		FY 1997			
1	2	3	4	1	2	3	4	1	2	3	4
Field Medical Oxygen Generation and Distribution System MLST 3											
Intraosseous Infusion Device MLST 3										X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY				DATE		PROJECT			
5 - Engineering And Manufacturing Development				February 1995		D832			
PE NUMBER AND TITLE									
0604807A Med Matl/Med Bio Def Equip Engr Dev									
A. Project Cost Breakdown									
Test and Evaluation				FY 1994	FY 1995	FY 1996	FY 1997		
Product Development				1034	4	60	5		
Program Management				995	1398	1324	1488		
Total				575	216	214	270		
				2604	1618	1598	1763		
B. Budget Acquisition History and Planning Information									
Performing Organizations									
Contractor or	Contract	Method/Type	Award or	Performing	Project	Total			
Government		or Funding	Obligation	Activity	Office	Prior to			
Activity	Vehicle	Date		EAC	EAC	FY 1994	FY 1995	FY 1996	FY 1997
Product Development Organizations									
Contracts	NA	NA	NA	NA	NA	NA	1398	1324	1488
Support and Management Organizations									
USAMMDA	NA	NA	NA	NA	NA	NA	132	99	180
Contracts	NA	NA	NA	NA	NA	NA	84	115	90
Test and Evaluation Organizations									
Army Laboratories	NA	NA	NA	NA	NA	NA	4	60	5
Government Furnished Property: None									
Subtotal Product Development							1398	1324	1488
Subtotal Support and Management							216	214	270
Subtotal Test and Evaluation							4	60	5
Total Project									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604807A Med Matl/Med Bio Def Equip Engr Dev								D834	
COST (In Thousands)		FY 1984 Actual	FY 1985 Estimate	FY 1986 Estimate	FY 1987 Estimate	FY 1988 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D834	Soldier System Protection-Engineering Development	306	0	901	915	950	962	956	955	Continuing	Continuing
<p>C. Other Program Funding Summary: Not Applicable</p> <p>D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY</p>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0504807A Med Matl/Med Bio Def Equip Engr Dev				
A. Project Cost Breakdown						
Test & Evaluation		FY 1994	FY 1995	FY 1996	FY 1997	
Product Development		0	0	0	0	
Project Management		10	0	885	899	
		296	0	20	21	
Total		306	0	905	920	
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or	Contract					
Government	Method/Type	Award or	Performing			
Performing	or Funding	Obligation	Activity			
Activity	Vehicle	Date	EAC			
Product Development Organizations						
Contracts	NA	NA	NA	FY 1994	FY 1995	FY 1996
Support and Management Organizations	NA	NA	NA	10	0	885
USAMMDA	NA	NA	NA	296	0	20
Test and Evaluation Organizations: None						
Government Furnished Property: None						
Subtotal Product Development				NA	0	885
Subtotal Support and Management				NA	0	20
Subtotal Test and Evaluation				NA	0	0
Total Project				NA	0	905
				Total	Budget to	Total
				Prior to	Complete	Program
				FY 1994	FY 1997	
				EAC		
				NA	899	Cont
				NA	21	Cont
				NA	899	Cont
				NA	21	Cont
				NA	0	Cont
				NA	920	Cont

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DATE February 1995

PE NUMBER AND TITLE

Engr Dev D847

Total Cost

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February 1995	PROJECT
BUDGET ACTIVITY			PE NUMBER AND TITLE			D847		
5 - Engineering And Manufacturing Development			0604807A Med Matl/Med Bio Def Equip Engr Dev					
A. Project Cost Breakdown								
Test & Evaluation								
Product Development								
Project Management								
Total								
B. Budget Acquisition History and Planning Information								
Performing Organizations								
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996
Product Development Organizations								
Contracts	NA	NA	NA	NA	NA	770	0	0
Support and Management Organizations								
USAMMDA	NA	NA	NA	NA	NA	63	0	0
Contracts	NA	NA	NA	NA	NA	34	0	0
Test and Evaluation Organizations								
Army Laboratories	NA	NA	NA	NA	NA	20	0	0
Government Furnished Property: None								
Subtotal Product Development					NA	770	0	0
Subtotal Support and Management					NA	97	0	0
Subtotal Test and Evaluation					NA	20	0	0
Total Project					NA	887	0	0

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604807A Med Matl/Med Bio Def Equip Engr Dev								D848	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D848	Medical Chemical Defense Life Support Materiel	1074	52	0	0	0	0	0	0	0	0
C. <u>Other Program Funding Summary</u> : Not Applicable											
D. <u>Schedule Profile</u> : Multiple medical developmental products will advance through the various events throughout the FY.											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February 1995	PROJECT
BUDGET ACTIVITY			PE NUMBER AND TITLE			D848		
5 - Engineering And Manufacturing Development			0604807A Med Matl/Med Bio Def Equip Engr Dev					
A. Project Cost Breakdown								
Test & Evaluation				FY 1994	FY 1995	FY 1996	FY 1997	
Product Development				107	0	0	0	
Project Management				728	0	0	0	
Total				239	52	0	0	
				1074	52	0	0	
B. Budget Acquisition History and Planning Information								
Performing Organizations								
Contractor or	Contract							
Government	Method/Type	Award or	Performing	Project	Total			
Activity	or Funding	Obligation	Activity	Office	Prior to			
	Vehicle	Date	EAC	EAC	FY 1994	FY 1995	FY 1996	FY 1997
Product Development Organizations								
Contracts	NA	NA	NA	NA	728	0	0	Cont
Support and Management Organizations								
USAMMDA	NA	NA	NA	NA	211	52	0	Cont
Contracts	NA	NA	NA	NA	35	0	0	0
Test and Evaluation Organizations								
Contracts	NA	NA	NA	NA	100	0	0	Cont
Government Furnished Property: None								
Subtotal Product Development					728	0	0	Cont
Subtotal Support and Management					239	52	0	Cont
Subtotal Test and Evaluation					107	0	0	Cont
Total Project					1074	52	0	Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995			
BUDGET ACTIVITY		PENUMBER AND TITLE								PROJECT			
5 - Engineering And Manufacturing Development		0604807A Med Matl/Med Bio Def Equip Engr Dev								D849			
COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D849	Infectious Disease Drug and Vaccine-Engineering Development	4220	4390	2048	2083	2123	2108	1844	1841	Continuing	Continuing		
C. Other Program Funding Summary: Not Applicable													
D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY													
		FY 1994		FY 1995		FY 1996		FY 1997					
		1	2	3	4	1	2	3	4	1	2	3	4
Cholera MLST 3a													
ETEC MLST 3a													
TBE MLST 3a													
Hepatitis A MLST 3													
Hantaan MLST 3a													
Chikungunya MLST 3a													
Shigell flexner MLST 3a													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY				PE NUMBER AND TITLE			DATE	PROJECT	
5 - Engineering And Manufacturing Development				0604807A Med Mat/Med Bio Def Equip Engr Dev			February 1995	D849	
A. Project Cost Breakdown									
Test & Evaluation				FY 1994	FY 1995	FY 1996	FY 1997		
				2527	2601	1645	1553		
Product Development				1284	1834	58	0		
Project Management				414	256	355	550		
Total				4225	4691	2058	2103		
B. Budget Acquisition History and Planning Information									
Performing Organizations									
Contractor or	Contract			Total				Budget to	Total
Government	Method/Type	Award or	Performing	Prior to				Complete	Program
Performing	or Funding	Obligation	Activity	FY 1994	FY 1994	FY 1995	FY 1996		
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1996		
Product Development Organizations									
Contracts	NA	NA	NA	NA	1284	1834	58	0	Cont
Support and Management Organizations									
USAMMDA	NA	NA	NA	NA	114	221	295	386	Cont
Contracts	NA	NA	NA	NA	300	35	60	164	Cont
Test and Evaluation Organizations									
Army Laboratories	NA	NA	NA	NA	168	219	308	349	Cont
Walter Reed Army	NA	NA	NA	NA	1347	1102	1137	554	Cont
Inst of Research									Cont
Contracts	NA	NA	NA	NA	264	300	0	0	Cont
Navy Laboratories	NA	NA	NA	NA	748	980	200	650	Cont
Government Furnished Property: None									
Subtotal Product Development									
Subtotal Support and Management				NA	1284	1834	58	0	Cont
Subtotal Test and Evaluation				NA	414	256	355	550	Cont
Total Project				NA	2527	2601	1645	1553	Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604808A Landmine Warfare/Barrier Engineering Development									
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		2912	7689	7382	20429	20399	38020	20884	17958	Continuing	Continuing
D016 Mine Systems Engineering Development		2912	6757	5392	5684	0	0	0	0	0	20755
D415 Mine Neutralization/Detection		0	932	1980	14735	20399	38020	20884	17958	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element (PE) provides for engineering and manufacturing development of mine and countermine systems. The PE provides for the increased tactical effectiveness and responsiveness of landmines by supporting the development of a Minefield Command and Control (MC2) system for the Wide Area Mines (WAM) and improved sensors that increase countermeasure resistance of Volcano mines, which can be dispensed rapidly from helicopters, ground dispensers, artillery systems and tactical aircraft. Project D415, Mine Neutralization/Detection Engineering Development, is the engineering and manufacturing development for the Airborne Standoff Minefield Detection System (ASTAMIDS), Explosive Standoff Minefield Breacher (SMB) and Close-in Manportable Mine Detector, and a product improvement to the Armored Vehicle Launched Mine Clearing Line Charge (AVLM). It provides a group of mutually supported mine detection and neutralization devices to counter a variety of threat mines, minefields and obstacles necessary for implementing the Army's Countermine Mod'rnization Plan.

Project D016 - Mine Systems Engineering Development: Provides for engineering and manufacturing development of Scatterable Mines (FASCAM) and new smart mines.

FY 1994 Accomplishments:

- Built hardware and completed M87E1 canister Qualification Testing (707)
- Developed corrective actions and built Technical Test (TT) hardware for M87E1 canister (1668)
- Completed Technical Testing for M87E1 canister (537)

FY 1995 Planned Program:

- Design control unit and communications module for WAM Command & Control (C2) (2408)
- Design Safe & Arm (S&A) for WAM Command & Control (2100)
- Perform WAM system engineering/integration and modify control electronics (2107)
- SBIR/STTR (142)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604808A Landmine Warfare/Barrier Engineering Development	
<p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Complete radio brassboard design for WAM C2 (1250) • Complete S&A design and control electronics modifications for WAM C2 (2440) • Develop software and lab test units for WAM C2 (1702) <p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Integrate, assemble, test and complete software development for WAM C2 (2220) • Conduct field demonstration and engineering verification for WAM C2 (2820) • Qualify WAM C2 prototype (654) <p>Acquisition Strategy: ASTAMIDS - RDTE development with sole source production award to RDTE contractor. SMB - RDTE development with sole source production award to RDTE contractor. VMMD - RDTE development with sole source production award to RDTE contractor.</p> <p>Project D415 - Mine Neutralization/Detection: This project provides engineering and manufacturing development for the Airborne Standoff Minefield Detection System (ASTAMIDS), Explosive Standoff Minefield Breacher (SMB), Close-in Manportable Mine Detector, Vehicle Mounted Mine Detector (VMMD) and a product improvement to the Armored Vehicle Launched MICLIC (AVLM). It provides a group of mutually supported mine detection and neutralization devices to counter a variety of threat mines, minefields and obstacles necessary for implementing the Army's Countermine Modernization Plan.</p> <p>FY 1994 Accomplishments: Project not funded in FY 1994.</p> <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct technical/operational testing of mounting device for AVLM (350) • Prepare Safety Assessment Report and document design of AVLM mounting device (112) • Reprogram to Anti-Personnel Obstacle Breaching Device to complete TC (450) • SBIR/STTR (20) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Award contract and procure test hardware for Interim VMMD (1290) • Conduct test and evaluation for Interim VMMD (500) • Conduct Milestone III IPR for Interim VMMD (200) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604808A Landmine Warfare/Barrier Engineering Development	
FY 1997 Planned Program:		
<ul style="list-style-type: none"> Conduct Milestone II IPR for ASTAMIDS (1000) Conduct source selection and initiate engineering development design for ASTAMIDS (9735) Procure long lead sensor and processor components for ASTAMIDS prototypes (4000) 		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1996
Appropriated Value	2957	10963
Adjustments to Appropriated Value	2957	19577
a. SBIR/STTR decrements (-45)	-45	
Current Budget Submit/President's Budget	2912	7382
		20429

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE									PROJECT	
5 - Engineering And Manufacturing Development		0604808A Landmine Warfare/Barrier Engineering Development									D016	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D016 Mine Systems Engineering Development	2912	6757	5392	5684	0	0	0	0	0	20755		
C. Other Program Funding Summary												
Ammo, \ Appropriation										Total		
E72190 , Volcano XM89	2466	5440	2000							Cost		
E72195, Volcano M87A1	0	43937										
OPA 3, A Appropriation												
G39100/Mine Dispenser M139	15933	16194	953	4273								
RDTE, A Budget Activity 4												
0604619A Project D088 Landmine Warfare	23272	33356	31028	18253	18092	19745	22283	22248	25400	213677		
D. Schedule Profile												
Complete M87E1 Canister Qualification Tests	1	2	3	4	1	2	3	4	1	2	3	4
Build TT Hardware for M87E1 Canister												
Complete Technical Tests for M87E1												
Design control unit and communications module for WAM Command & Control (C2)												
Design Safe & Arm (S&A) for WAM C2												
Perform WAM system engineering/integration and modify control electronics												
Complete radio baseboard design for WAM C2												
Complete S&A design and control electronics modifications for WAM C2												
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
5 - Engineering And Manufacturing Development		0604808A Landmine Warfare/Barrier Engineering Development		D016	
A. Project Cost Breakdown					
Hardware Development	FY 1994	FY 1995	FY 1996	FY 1997	
Test & Evaluation	1864	5955	4417	4519	
Gov't Engineering & Support	453	0	300	500	
Gov't Program Support	457	500	500	500	
Miscellaneous - SBIR/STTR (FY 95)	138	160	175	175	
Total	2912	6757	5392	5694	
B. Budget Acquisition History and Planning Information					
Performing Organizations					
Contractor or Government	Method/Type or Funding	Award or Obligation Date	Performing Activity	Project Office	Total Prior to
Activity	Vehicle	Date	EAC	EAC	FY 1994
Product Development Organizations					
Alliant	CPIF	AUG 90	10294	10294	8430
Textron	CPIF	TBD	14991	14991	
Support and Management Organizations					
ARDEC					
Test and Evaluation Organizations					
TECOM					
Miscellaneous	SBIR/STTR (FY 95)				
Subtotal Product Development					
Subtotal Support and Management					
Subtotal Test and Evaluation					
Subtotal Miscellaneous					
Total Project					
</					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604808A Landmine Warfare/Barrier Engineering Development								D415	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D415	Mine Neutralization/Detection	0	932	1900	14735	20399	38020	20884	17958	Continuing	Continuing
C. Other Program Funding Summary											
RDTE, A Budget Activity 3										To	Total Cost
PE 0603619 Project D606 Countermine/Barrier Advanced Development		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
OPA 3, A Appropriation		15986	23562	32889	17044	7915	5575	7211	11673	Cont'd	Cont'd
M80101, Initial VMMD											
S11500, ASTAMIDS					6755	9942	6667	11989	11989		23364
R68200, Close-in Manportable Detection									6822		23978
R68000, Standoff Hand Held Detector							3977	3977			7954
M79900, Mine Countermeasures, Electronic									13672		13672
D. Schedule Profile											
Conduct Technical/Operational Testing of AVLM mounting kit		FY 1994	FY 1995	FY 1996						FY 1997	
Complete design of AVLM mounting kit		1	2	3	4	1	2	3	4	1	2
Award contract and procure test hardware for Interim VMMD					X						3
Conduct test and evaluation for Interim VMMD											4
Conduct Milestone III IPR for Interim VMMD						X					
Conduct Milestone II IPR for ASTAMIDS											X

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 1995				
BUDGET ACTIVITY			PE NUMBER AND TITLE											
5 - Engineering And Manufacturing Development			0604808A Landmine Warfare/Barrier Engineering Development											
			FY 1994		FY 1995		FY 1996		FY 1997					
			1	2	3	4	1	2	3	4	1	2	3	4
Conduct source selection and initiate engineering development design for ASTAMIDS														X
Procure long lead sensor and processor components for ASTAMIDS prototypes														X
ASTAMIDS LRIP IPR														
ASTAMIDS Milestone III														
Explosive SMB Milestone III														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE			D415		
5 - Engineering And Manufacturing Development		0604808A Landmine Warfare/Barrier Engineering Development					
A. Project Cost Breakdown							
		FY 1994	FY 1995	FY 1996	FY 1997		
Primary Hardware Development			0	1215	10035		
Test and Evaluation			350	200	0		
Govt Engineering and Support			432	475	4100		
Govt Program Management			130	100	600		
Miscellaneous - SBIR/STTR- (FY 95)			20				
Total			932	1990	14735		
B. Budget Acquisition History and Planning Information							
Performing Organizations							
Contractor or Government	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete
Product Development Organizations							
TBD	CPIF	TBD	N/A	N/A	N/A	0	10035
TBD	CPIF	TBD	N/A	N/A	N/A	0	1215
Support and Management Organizations							
CECOM			N/A	N/A	N/A	0	4700
Test and Evaluation Organizations							
TECOM						0	0
Miscellaneous	SBIR/STTR (FY 95)					350	20
Subtotal Product Development						1215	10035
Subtotal Support and Management						562	4700
Subtotal Test and Evaluation						350	200
Subtotal Miscellaneous						20	0
Total Project						932	14735
							10035
							1215
							5837
							550
							20
							17657

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	
BUDGET ACTIVITY										February 1995	
PE NUMBER AND TITLE											
0604814A Sense And Destroy Armor Engineering											
Development											
5 - Engineering And Manufacturing Development		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0000 (in thousands)											
0000 Program Element (PE) Cost		42008	41395	16617	3626	2428	0	0	0	0	944636
D2ST SADARM OPERATIONAL TEST		0	0	0	3626	2428	0	0	0	0	6054
D644 GENERIC SADARM ENGINEERING DEVELOPMENT		42008	41395	16617	0	0	0	0	0	0	938582

A. Mission Description and Budget Item Justification: Sense and Destroy Armor (SADARM) munitions will provide an enhanced fire/counterfire capability for 155mm howitzer delivery systems capable of attacking targets well beyond the Forward Line of Troops (FLOT) in a fire-and-forget mode. SADARM will be capable for use, both day and night, in inclement weather and degraded battlefield conditions. SADARM munitions are designed for use against self-propelled howitzers and armored vehicles acquired while providing counterfire, close support, suppression of enemy air defense (SEAD), and interdiction fires. Upon ejection from the 155mm projectile, the submunition deploys and descends toward the ground at a constant velocity and spin rate. The submunition contains a sensing mechanism which is a dual-mode millimeter wave sensor and an infrared sensor array. If a target is present within the scan area, the sensor detects its presence and fires an explosively formed penetrator (an explosive charge forms a ballistically shaped penetrator from a metal liner) into the target. The projects within this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project D2ST - SADARM Operational Test: This project finances the direct costs of planning and conducting operational testing evaluation of the Sense and Destroy Armor (SADARM) munitions by the Operational Test and Evaluation Command (OTPEC). SADARM is an Acquisition Category (ACAT) I system with an initial Operational Test and Evaluation (IOTE) in FY 98. Operational Testing is conducted under conditions that approximate, as closely as possible, those encountered in actual combat with typical user troops trained to employ the system. OTPEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2ST is restructured from SSN E66300, Projectile, Artillery, 155mm SADARM, M898, Procurement Ammunition, Army, and is not a new start.

FY 1994 Accomplishments: Not applicable.

FY 1995 Planned Program: No planned program

FY 1996 Planned Program: No planned program

FY 1997 Planned Program:

- Planning and preparation for test during the 5QTR FY 98 IOTE (1804)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		0604814A Sense And Destroy Armor Engineering Development	
<div>• Planning and preparation for evaluation during the 3QTR FY 98 IOTE (911)</div> <div>• Player unit and instrumentation preparation for the 3QTR FY 98 IOTE (911)</div> <div>Project D644 - Generic Sense and Destroy Armor Engineering Development</div> <div>FY 1994 Accomplishments</div> <div>• 155mm Engineering/Failure Analysis (19250)</div> <div>• 155mm corrective action (8158)</div> <div>• 155mm Technical Testing (2100)</div> <div>• Ramp-up prime/reactivate subs/vendors (12500)</div> <div>FY 1995 Planned Program:</div> <div>• 155mm Engineering/corrective action (32626)</div> <div>• 155mm Technical Performance Testing (3100)</div> <div>• Producibility Efforts (4800)</div> <div>• Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) decrement (869)</div> <div>FY 1996 Planned Program:</div> <div>• 155mm Performance Testing (2000)</div> <div>• Producibility Efforts/Testing (8800)</div> <div>• Transition to production efforts (5817)</div> <div>FY 1997 Planned Program: No planned program</div> <div>B. Program Change Summary</div> <div>Previous President's Budget</div> <div>Appropriated Value</div> <div>Adjustments to Appropriated Value</div> <div> a. SBIR/STTR decrease (-442)</div> <div> b. Reprogrammed into PE (350)</div> <div> c. Congressional Reprogramming (+13600)</div> <div>Current Budget Submit/President's Budget</div>			
		FY 1994	FY 1995
		28500	72071
		28500	41395
		13508	
			FY 1996
			88117
			FY 1997
			0
		42008	16617
			3626

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604814A Sense And Destroy Armor Engineering Development		
Change Summary Explanation (By Project):			
<p>Project D644 - Sense and Destroy Armor (SADARM) Funding/Schedule/Technical: Congress reduced the FY 1994 budget from \$42.0M to \$28.5M because of failures in performance testing, requiring a total revision to the SADARM Program Plan. Subsequently, a General Officer Steering Committee (GOSC) revalidated the requirement for the SADARM Smart Submunition in the 155mm Carrier. Successful performance tests were conducted in April 1994.</p> <p>The FY 1995 PB request for \$88.1M for the FY 96 program was based on a restructured program (approved in Oct 93) that extended EMD by 27 months, with initial production of the 155mm SADARM to begin in FY 97. However, after the successful April 94 tests, the GOSC approved going to the ASARC and accelerating initial production to FY 95. This strategy was subsequently approved by Congress.</p> <p>The ASARC approved FY 95 Low Rate Production in Jan 1995. The Defense Acquisition Board (DAB) is scheduled for March 1995. FY 1995 initial production of 80 SADARM projectiles for \$24.8M. The Full Rate Production decision is scheduled for FY 1998.</p> <p>The R&D requirement in FY 96 was reduced from \$88.1M to \$16.7M because of the Army's decision not to put the SADARM in the basic MLRS, correction of second order technical issues to improve reliability, and plans to begin initial production in FY 95 (versus FY 97).</p>			
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BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

TYPE NUMBER AND TITLE

0604814A Sense And Destroy Armor Engineering

Development

PROJECT

D2ST

COST (in Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2ST	SADARM OPERAT JNAL TEST	0	0	0	3526	2428	0	0	0	0	6054

C. Other Program Funding Summary: There are no other related RDT&E or other Appropriation efforts.

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
Initiate preparation for 1Q FY 98 IOTE	1 2 3	4 1 2 3	4 1 2 3	4 1 2 3
Opn'l Test Readiness Review (1 of 3)				X

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BUDGET ACTIVITY		RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	PROJECT
5 - Engineering And Manufacturing Development		0604814A Sense And Destroy Armor Engineering Development				D2ST
		PE NUMBER AND TITLE				
A. Project Cost Breakdown						
Operational Test and Evaluation						
Total						
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or	Contract					
Government	Method/Type					
Performing	or Funding					
Activity	Vehicle					
	Award or					
	Obligation					
	Date					
	Performing					
	Activity					
	EAC					
	Project					
	Office					
	EAC					
	Total					
	Prior to					
	FY 1994					
	FY 1995					
	FY 1996					
	FY 1997					
	Budget to					
	Complete					
	Total					
	Program					
Product Development Organizations: N/A						
Support and Management Organizations: N/A						
Test and Evaluation Organizations						
OPTEC, Alex, VA						
Government Furnished Property: None						
Subtotal Product Development						
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604814A Sense And Destroy Armor Engineering

PROJECT

D644

Development

COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D644 GENERIC SADARM ENGINEERING DEVELOPMENT	42008	41395	16617	0	0	0	0	0	0	938562

C. Other Program Funding Summary

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Procurement, Ammunition, Army, SSN E66300, Proj, Arty, 155mm SADARM XM898		24824	24284	62449	72576	82100	90000	90000	207800	2525033

D. Schedule Profile

Complete Fuze, Safe, and Arm tests
ASARC/Type Classify (Low Rate Prod)
Defense Acq Board/MSIIIA
Initial Verification Testing
Award first Low Rate Prod Contract
Final Verification Tests
Award second Low Rate Prod Contract
Producibility Confirmation Firings
Conduct Initial Production Test (IPT)

IOTE: 4QFY98

MSIII: 1QFY99

Award Full Scale Prod: 2QFY99

IOC: 4QFY99

* Denotes completed

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995	
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT		
5 - Engineering And Manufacturing Development		0604814A Sense And Destroy Armor Engineering Development								D644		
A. Project Cost Breakdown												
Contractor Engineering Support		FY 1994	FY 1995	FY 1996	FY 1997							
		36109	32800	12200	0							
Government Engineering Support		2724	2670	1700	0							
Program Management Support		1498	1741	1047	0							
Developmental Test and Evaluation		1677	3315	1670	0							
SBIR/STTR			869									
Total		42008	41395	16617								
B. Budget Acquisition History and Planning Information												
Performing Organizations												
Contractor or Government Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program	
Product Development Organizations												
Aerojet- Azusa CA	C/CPIF	SEP 86	TBD	436830	355721	36109	32800	12200	0	0	436830	
ARDEC- Picatinny					57453	950	1000	650	0	0	60053	
Alliant Tech Sys- Hopkins, MN	C/CPIF	SEP 86	TBD	188714	188038	0	0	0	0	0	188038	
Loral Vought Sys- Dallas, TX	SS/CPIF	SEP 88	TBD	90535	90535	0	0	0	0	0	90535	
Miscellaneous					7645	0	0	0	0	0	7645	
Support and Management Organizations												
Picatinny Arsenal					7792	2338	2047	1397	0	0	13574	
PMO-MLRS,					15891	375	0	0	0	0	16266	
SADARM, AL												
SBIR/STTR												
Miscellaneous					7118	336	869	350	0	0	869	
							914				8718	
Test and Evaluation Organizations												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604814A Sense And Destroy Armor Engineering

PROJECT

D644

Development

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
YPG, Yuma, AZ.					18237	1115	1040	1000	0	0	0	21392
WSMR, White Sands, N.Mex.					26487	0	0	0	0	0	0	26487
Miscellaneous					63645	785	2725	1020	0	0	0	68175
Government Furnished Property: None.												
Subtotal Product Development					699392	37059	33800	12850				783101
Subtotal Support and Management					30801	3049	3830	1747				39427
Subtotal Test and Evaluation					108369	1900	3765	2020				116054
Total Project					838562	42008	41395	16617				938582

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development									
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	271103	169048	23590	4080	0	0	0	0	0	1736891	
DC13 Hellfire Seeker	105314	34522	0	0	0	0	0	0	0	384022	
DC27 Longbow - Engineering Development	79839	22479	0	0	0	0	0	0	0	761795	
DC31 Longbow - Apache	85950	88216	9261	0	0	0	0	0	0	548834	
DC87 LBA TESS	0	0	14329	4080	0	0	0	0	0	18409	
D2DT LBA Operational Test	0	23831	0	0	0	0	0	0	0	23831	

A. Mission Description and Budget Item Justification: Longbow will provide the AH-64 with a fire-and-forget Hellfire capability, greatly increasing weapon system effectiveness and aircraft survivability. The weapon system will be employable by day or night, in adverse weather, and in countermeasures environments. The Hellfire missile will effectively engage and destroy advanced threat armor on the digital battlefield well into the next century. Longbow Project DC27 consists of the development of a mast-mounted Fire Control Radar (FCR) for the AH-64; DC13 consists of the development of a radar frequency (RF) missile seeker for the Hellfire missile. Project DC31 encompasses efforts necessary to synchronize the integration of the FCR and RF missile onto the Apache aircraft. It includes two versions of the Longbow Apache AH-64D series aircraft: (1) the AH-64D with the FCR mission kit plus the upgraded 701C engine, and (2) the AH-64D without the FCR mission kit and engine upgrade. Project D2DT was previously transferred from support of operational test PE 65712 (Project D001) to fund the direct costs of Initial Operational Test and Evaluation (IOTE) in October 1994 and the Longbow Operation Test in January 1995. Project DC87 is a new start. Longbow Apache Tactical Engagement Simulation System (TESS) will perform air-to-air and RF missile simulations in addition to the functions of the Multiple Integrated Laser Engagement System/Air to Ground Engagement System for force-on-force collective training after fielding (and also includes follow-on development of the Longbow Crew Trainer). The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project DC13 - Hellfire Seeker: This project develops the Longbow Hellfire, a missile that is capable of being employed day or night, in adverse weather, and in a countermeasures environment against armored targets and air defense systems. Its millimeter wave seeker and inertial measurement system provide a fire-and-forget capability which greatly reduces aircraft exposure time. It uses a Hellfire II warhead system to destroy threat armor projected for early into the 21st century.

FY 1994 Accomplishments:

- Engineering development contract (87664)
- Testing (7221)
- Missile Flight Testing

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604816A Longbow - Engineering Development		
<ul style="list-style-type: none"> - Qualification Testing - Electromagnetic Environmental Effect Testing - Warhead/Live Fire Testing - Countermeasure Testing • Program Management Support (10429) 			
FY 1995 Planned Program:			
<ul style="list-style-type: none"> • Complete Engineering Development Contract (20994) • Testing (4962) <ul style="list-style-type: none"> - Missile Flight Testing - Qualification Testing - Electromagnetic Environmental Effect Testing - Warhead / Live Fire Testing - Countermeasure Testing • Complete Program Management Support (7841) • SBIR/STTR (725) 			
<p>Project DC27 - Longbow Engineering Development: This project consists of a mast-mounted Fire Control Radar (FCR) that will be integrated onto the AH-64 airframe. The FCR integration, along with the Hellfire Seeker (Project DC13) will provide the AH-64 with a fire-and-forget capability, greatly increasing weapon system effectiveness and aircraft survivability. The weapon system will be employable day or night, in adverse weather, and in countermeasures environments. The system will effectively engage and destroy high-value targets including advanced armor on the battlefield well into the next century. To be effective and survive on this future battlefield, the attack helicopter team must rapidly engage multiple targets with minimum exposure time and deploy a system that is inherently resistant to threat countermeasures.</p>			
FY 1994 Accomplishments:			
<ul style="list-style-type: none"> • Engineering Development Contract (66202) <ul style="list-style-type: none"> - Complete Aircraft Integration - Complete 1,000 Hour Test, Analyze, and Fix Effort - Complete FCR Mode Development - Conduct FCR Specification Verification Tests - Conduct Government Technical Test - Complete Delivery of FCR Prototypes - Conduct Environmental Qualification Tests • In House Support (4195) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604816A Longbow - Engineering Development	
<ul style="list-style-type: none"> • Test Support (6853) <ul style="list-style-type: none"> - Development Testing (3209) - Qualification Testing (2550) - Live Fire Test and Evaluation (115) - Target Support (979) • Support Contracts (2589) <ul style="list-style-type: none"> - Technical Support (712) - Software Support (653) - Logistics Support (825) - Planning Support (399) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> • Engineering Development Contract (15897) <ul style="list-style-type: none"> - Conduct FDTE - Complete environmental qualification - Award Long Lead Production Contract - Complete Systems Test - Conduct Functional Configuration Audit - Conduct Initial Operational Test and Evaluation - Complete Development Program • In House Support (2986) • Test Support - Live Fire Test and Evaluation (430) • Support Contracts (2780) • SBIR/STTR (386) 		
<p>Project DC31 - Longbow Apache: The Longbow program encompasses modifications to the AH-64 Apache as well as upgrades to the aircraft systems for the AH-64 series to efficiently and effectively integrate the FCR and RF missile. The system provides an adverse weather fire-and-forget missile capability that increases the AH-64 lethality and survivability. The Longbow Apache also retains the capability to fire the Semi-Active Laser Hellfire. The greatly improved design enhancements increase operational capability of the crew and provide increased survivability and lethality, while complying with Congressional direction to standardize the fleet to a common configuration.</p>		
FY 1994 Accomplishments: <ul style="list-style-type: none"> • McDonnell Douglas Helicopter Systems (MDHS) Prime Contract (71126) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development	
<ul style="list-style-type: none"> - Fabricate Aircraft #5 and #6 - Electromagnetic Vulnerability / Hazards of Electromagnetic Radiation to Ordnance Test - Electromagnetic Compatibility Demonstration - Physical Teardown Logistics Demonstration - Preliminary Production Qualification Test (PPQT) - Improved Data Modem Testing - Handling Qualities Testing - Software Development - Logistics Demonstrations - PPQT Pilot Training - Force Development Test and Experimentation (FDTE) Maintenance Training - Aviation Mission Planning Station Training - Programmatic and Technical Support (PATs) Contract (1731) • GFE (2000) • In House Support (11093) <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • MDHS Prime Contract (70566) • PATS Support Contract (2800) • GFE (1110) • In House Support (11887) • SBIR/STTR (1853) <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • MDHS Prime Contract (7754) • In House Support (407) • PATS Support Contracts (1100) <p>Project DC87 - LBA TESS: The Tactical Engagement Simulation System (TESS) consists of an "A" Kit and a "B" kit. The Longbow PM will contract with McDonnell Douglas Helicopter Systems to do the provisioning for the "A" Kit, which consists of minimal on-board software for data interface operator control software, wiring, and power source taps for the "B" kit. Validation of the program depends upon completion of the Best Technical Approach. This project is a new start.</p> <p>FY 1996 Planned Program:</p> <ul style="list-style-type: none"> • Start development, fabrication, and integration of the "A" Kit (2000) 			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604816A Longbow - Engineering Development	
<ul style="list-style-type: none"> • Start development, fabrication, and integration of the "B" Kit (12329) • Continue development of the Longbow Crew Trainer (29) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> • Complete integration of the "A" Kit (600) • Complete integration of the "B" Kit (3480) 		
<p>Project D2DT - LBA Operational Test: This project finances the direct costs of planning and conducting operational testing and evaluation of the Longbow Apache system by the Operational Test and Evaluation Command (OPTEC). The Longbow Apache is an Acquisition Category I system with an Initial Operational Test and Evaluation (IOTE) in 1995. Operational Testing is conducted under conditions as close as possible to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2DT is restructured from PE 0605712A, Support of Operational Testing.</p>		
FY 1995 Planned Program: <ul style="list-style-type: none"> • Longbow Apache IOTE testing (18379) • Longbow Apache IOTE evaluation (1367) • Player unit support of IOTE (3584) • SBIR/STTR (501) 		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1995
Appropriated Value	277954	191303
Adjustments to Appropriated Value (Total PE)	277954	169048
a. SBIR/STTR(-4245)	-6651	
b. Reprogrammed out of PE (-2406)		
Current President's Budget	271103	169048
		23590
		4100
		4080

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development								DC13	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC13	Hellfire Seeker	105314	34522	0	0	0	0	0	0	0	384022
C. Other Program Funding Summary											
Missile Procurement, Army Hellfire (C70300)		FY 1994 0	FY 1995 41995	FY 1996 197513	FY 1997 262504	FY 1998 280491	FY 1999 302314	FY 2000 304590	FY 2001 311214	To Compl 548400	Total Cost 2249021
D. Schedule Profile											
Tower Test		1									
High Speed Captive Flight Test		2	3	1	2	4	1	3	4	1	4
Missile Firings (Rail-launched)											
Missile Firings (Helo-launched)			X*								
Hardware-In-The-Loop Tests											
System Qualification Tests											
IOTE											
Live Fire Tests											
*Denotes complete effort											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development			February 1995 DC13	
A. Project Cost Breakdown						
Prime Contract	FY 1994	FY 1995	FY 1996	FY 1997		
Program Management Support	87664	20994	0	0		
SBIR/STTR	17650	12803	0	0		
Total	105314	34522				
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete FY 1997
Product Development Organizations						
Longbow Joint Venture (Martin Marietta and Westinghouse)	SS/CPIF/AF	DEC 90	317801	320310	224831	0
SBIR/STTR					87664	0
Support and Management Organizations						
Program Management Support				19355	10429	0
Test and Evaluation Organizations					7841	0
Test Activities					725	0
					7221	0
					4962	0
					0	0
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Note: EAC shown reflects only contract work definitized to date. Total Program data reflects additional work not yet on contract.

Government Furnished Property - Not Applicable

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995		
BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development			
		Total			
	Prior to	FY 1994	FY 1995	FY 1996	
		FY 1997	Complete	Total	
		Program			
Subtotal Product Development		224831	87664	21719	334214
Subtotal Support and Management		19355	10429	7841	37625
Subtotal Test and Evaluation			7221	4962	12183
Total Project		244186	105314	34522	384022

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		February 1995			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT					
5 - Engineering And Manufacturing Development					0604816A Longbow - Engineering Development					DC27					
COST (In Thousands)					FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
DC27 Longbow - Engineering Development					79839	22479	0	0	0	0	0	0	0	761795	
C. Other Program Funding Summary															
APA - Apache Longbow FCR (AA6608)					FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost	
					0	0	84679	98984	110321	126136	123395	115873	34033	693421	
D. Schedule Profile															
1					FY 1994			FY 1995		FY 1996			FY 1997		
					2	3	4	1	2	3	4	1	2	3	4
BIT Demonstrations						X*									
Logistics Demonstrations						X*									
FCR Mode Performance Demonstration						X*									
Technical Test								X*							
Adverse Weather Test															
FDTE															
IOTE															
Long Lead IPR															
FCA															
Long Lead Contract Award															
*Denotes complete effort															

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development								DC27	
A. <u>Project Cost Breakdown</u>											
Contractor Engineering & Development		FY 1994	FY 1995	FY 1996	FY 1997						
Government Program Management		66202	15897								
Other Government Support		3525	2986								
PATs Contractor Program Support		7523	430								
SBIR/STTR		2589	2780								
Total		79839	386								
			22479								
B. <u>Budget Acquisition History and Planning Information</u>											
Performing Organizations											
Contractor or	Contract										
Government	Method/Type										
Performing	or Funding										
Activity	Vehicle	Award or	Performing	Project	Total						
		Obligation	Activity	Office	Prior to						
		Date	EAC	EAC	FY 1994	FY 1995	FY 1996	FY 1997	Budget to	Total	
									Complete	Program	
Product Development Organizations											
Proof of Principle	SS / C/PF		Contract is	Contract is	396945	0	0	0	0	396945	
Contract:			Complete	Complete							
Longbow Joint											
Venture (Martin											
Marietta and											
Westinghouse)											
EMD Contract:	SS	DEC 90	330020	331561	251483	66202	15897	0	0	333582	
Longbow Joint	C/PF / AF										
Venture											
SBIR/STTR							386			386	
Support and Management Organizations											
Gov't In-House	Varies	Quarterly			3446	4195	2986	0	0	10027	
PATs Contractors	Varies	Quarterly			4053	2589	2780	0	0	9422	
Test and Evaluation Organizations											
Test Activities	Varies	Quarterly			3550	6853	430			10833	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	
BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development			
Government Furnished Property - Not Applicable					
		Total			
		Prior to			
		FY 1994	FY 1995	FY 1996	FY 1997
		648428	66202	16283	
		7499	6784	5166	
		3550	5853	430	
		659477	79839	22479	
</					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY										PROJECT	
5 - Engineering And Manufacturing Development										DC31	
PE NUMBER AND TITLE										0604816A Longbow - Engineering Development	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
DC31 Longbow - Apache	85950	88216	9261	0	0	0	0	0	0	548834	
C. Other Program Funding Summary											
APA - Longbow Apache Mods (AA6607)	FY 1994 0	FY 1995 79438	FY 1996 270168	FY 1997 310729	FY 1998 349771	FY 1999 441378	FY 2000 518328	FY 2001 489977	To Compl 5203694	Total Cost 7663483	
D. Schedule Profile											
1											
BIT Demonstrations											
Logistics Demonstrations											
Technical Test											
FDTE											
IOTE (Project D2DT)											
Long Lead IPR											
Long Lead Contract Award											
FCA											
Live Fire Testing											
Line Replaceable Units Qualification											
Environmental Control System Redesign											
Longbow Crew Trainer											
*Denotes complete effort											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE										
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development								DC31		
A. <u>Project Cost Breakdown</u>												
Contractor Engineering & Development		FY 1994	FY 1995	FY 1996	FY 1997							
Government Program Management		71126	70566	7754								
Other Government Support		5272	4191	0								
PATs Contractor Program Support		7821	8806	407								
SBIR/STTR		1731	2800	1100								
Total		85950	88216	9261								
B. <u>Budget Acquisition History and Planning Information</u>												
Performing Organizations												
Contractor or	Contract			Total								
Government	Method/Type	Award or	Performing	Project								
Performing	or Funding	Obligation	Activity	Office								
Activity	Vehicle	Date	EAC	EAC								
Product Development Organizations												
Contract:	CPIF	AUG 89	416992	422100	308020	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program	
McDonnell						71126	70566	7754	0	0	457466	
Douglas Helicopter												
Systems												
SBIR/STTR							1853				1853	
Support and Management Organizations												
Gov't In-House	Varies	Quarterly			53057	11620	12402	407	0	0	77486	
PATs Contractors	Varies	Quarterly			3450	1731	2800	1100	0	0	9081	
Test and Evaluation Organizations												
Test Activities	Varies	Quarterly			880	1473	595	0	0	0	2948	
Note: EAC shown reflects only contract work definitized to date. Total Program data reflects additional work not yet on contract.												
Government Furnished Property - Not Applicable												
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February 1995

PE NUMBER AND TITLE

0604816A Longbow - Engineering Development

PROJECT
DC31

	Total					
	Prior to					
	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete
Subtotal Product Development	308020	71126	72419	7754		459319
Subtotal Support and Management	56507	13351	15202	1507		86567
Subtotal Test and Evaluation	880	1473	595			2948
Total Project	365407	85950	88216	9261		548834

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development								DC87	
DC87 LBA TESS		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
		0	0	14329	4080	0	0	0	0	0	18409
C. Other Program Funding Summary											
Longbow Apache TESS (AA6607)		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
		0	0	0	0	3600	3800	24400	0	0	31800
This procurement funding represents only the portion of this line to be used for this effort. The procurement line (SSN) includes additional funding for Longbow Apache efforts.											
D. Schedule Profile											
Begin Kits installation		FY 1994			FY 1995		FY 1996		FY 1997		
1	2	3	4	1	2	3	4	1	2	3	4
Complete Kits installation										X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT			
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development		DC87			
A. Project Cost Breakdown							
Contractor Engineering & Development		FY 1994	FY 1995	FY 1996	FY 1997		
Longbow Crew Trainer Development				14300	4080		
Total				29			
				14329	4080		
B. Budget Acquisition History and Planning Information							
Performing Organizations							
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete	
Product Development Organizations							
MDHS	Unknown						
Support and Management Organizations: N/A							
Test and Evaluation Organizations: N/A							
Government Furnished Property - Not Applicable							
Subtotal Product Development				14329	4080	18409	
Subtotal Support and Management							
Subtotal Test and Evaluation				14329	4080	18409	
Total Project							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995

PE NUMBER AND TITLE=

0604816A Longbow - Engineering Development

D2DT

[illegible]

C. Other Program Funding Summary: N/A

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
Initiate Preparation for IOTE	1 2 3	1 2 3	1 2 3	1 2 3
Complete IOTE	4 X*	4 X	4 X	4 X

*Denote complete effort

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE	PROJECT
5 - Engineering And Manufacturing Development		0604816A Longbow - Engineering Development	D2DT

<u>A. Project Cost Breakdown</u>	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	
Operational Test and Evaluation SBIR/STTR		2330			Total Program
Total		501			501
		23831			
<u>B. Budget Acquisition History and Planning Information</u>					
Performing Organizations					
Contractor or Government	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996
Method/Type of Funding Vehicle	EAC				
Performing Activity					Budget to Complete
Product Development Organizations					
SBIR/STTR			501		
Support and Management Organizations: N/A					
Test and Evaluation Organizations					
OPTEC	23330	0	23330	0	23330
Government Furnished Property - Not Applicable					
Subtotal Product Development			501		501
Subtotal Support and Management					
Subtotal Test and Evaluation			23330		23330
Total Project			23831		23831

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604817A Combat Identification									
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	33627	18424	30466	17359	16032	10085	9992	9977	Continuing	Continuing	
D482 Ground Combat Identification	24817	18424	30466	17359	10032	10085	9992	9977	Continuing	Continuing	
D356 Noncooperative Target Recognition - Electronic Surveillance Measure (NCTR-ESM)	8810	0	0	0	0	0	0	0	0	75634	

A. Mission Description and Budget Item Justification: The world situation and modern warfare are evolving in a manner that dictates making reliable identification of friends, foes, and neutrals an absolute necessity, but increasingly difficult to achieve. The ability of weapons systems to engage targets at ranges longer than the capability to positively identify them significantly increases the potential for fratricide. Work is directed toward the design and development of distinct technology devices to help minimize this battlefield deficiency and is appropriately assigned to Budget Activity 5. The projects within this PE are in the Engineering and Manufacturing Development (EMD) phase.

Project D482- Ground Combat Identification: The Battlefield Combat Identification System (BCIS) is the lead Army horizontal technology initiative using the "A kit" (platform specific) and "B kit" (common to all platforms) philosophy. The program takes advantage of acquisition streamlining and directs industry to use commercial parts and practices to shorten acquisition timelines and to reduce cost. The purpose of BCIS is to reduce fratricide, a problem made increasingly difficult for gunners as we participate in coalition warfare where partners operate weapon systems formerly associated with adversaries. BCIS is a millimeter wave (mmW), ground-ground (G-G), point of engagement system which provides through-the-sight, day/night, all weather positive identification of BCIS equipped US, Allied and coalition platforms. Shooters query potential targets at ranges that can extend beyond 5 km. Friendly platforms targeted by friendly shooters generate automatic electronic responses in less than one second. BCIS is resistant to electronic countermeasures, active exploitation and deception. Air-ground (A-G), Forward Air Controller and Enhanced BCIS are additional applications to be developed under this PE and Project. The Enhanced BCIS will add to the existing functions, a capability to provide platoon-level mmW network for passing Situational Awareness data between BCIS equipped platforms. BCIS will be demonstrated during the Army Digitization Exercise, Task Force XXI. It will be used by combat, combat support, and combat services support units.

FY 1994 Program Accomplishments

- Conducted Preliminary Design Review (PDR) (792)
- Conducted Critical Design Review (CDR) (1000)
- Initiated platform integration efforts (7000)
- Conducted Dismounted Soldier/Fixed Wing/Training Studies (500)
- Initiated hardware fabrication/assembly/test (14725)
- Initiated modeling/simulation effort (800)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE 0604817A Combat Identification	
5 - Engineering And Manufacturing Development		
FY 1995 Planned Program <ul style="list-style-type: none"> • Complete hardware fabrication/assembly/test (6212) • Complete platform integration (4726) • Conduct Pre-Production Qualification Test (PPQT) (1850) • Complete modeling/simulation effort (262) • Exercise options for Task Force XXI (TF XXI) Experiment (5000) • Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Program (374) 		
FY 1996 Planned Program <ul style="list-style-type: none"> • Conduct Limited User Test (LUT) (1200) • Continue hardware build for Task Force XXI (19571) • Initiate Forward Air Controller (FAC) EMD effort (3786) • Initiate Enhanced BCIS effort (1818) • Conduct Low Cost BCIS Study (1091) • All Service Combat Identification Evaluation Team (ASCIET) Support- (3000) 		
FY 1997 Planned Program <ul style="list-style-type: none"> • Complete TF XXI effort (5154) • Complete FAC effort (700) • Complete Enhanced BCIS effort (850) • Conduct Air-to-Ground (A-G) Preliminary Design Review (PDR) (1600) • Conduct A-G Critical Design Review (CDR) (1920) • Initiate A-G platform integration efforts (4135) • ASCIET Support - (3000) 		
<p>Project D356 - NCTR-ESM: AN/VSX-2 Target Acquisition and Identification devices developed by this project will locate and identify targets at extended ranges to permit maximum weapons air defense and encounter and preclude engagement of friendly aircraft. The NCTR-ESM device passively identifies aircraft by recognizing their electronic emissions. The device collects, processes and analyzes data for comparison to a signature library to identify the aircraft.</p>		
FY 1994 Program Accomplishments <ul style="list-style-type: none"> • Completed integration of AN/VSX-2 unit with host platform (1700) • Completed AN/VSX-2 PPQT/Operational Assessment (PPQT/OA) (2400) • Completed Army Engineering and Manufacturing Development (E&MD) (2660) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE	February 1995
• Developed and tested Model 2 IFF capability for FAAD GBS (2050)	0604817A Combat Identification	
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1997
	34150	10026
Appropriated Value		
Adjustments to Appropriated Value	34150	
SBIR/STTR Decrement (-523)	-523	
Current Budget Submit/President's Budget	33627	17359*
*Reflects a realignment of funding from Procurement to RDT&E; units planned for Task Force 21 are engineering development models within experimental purpose and should be funded in the engineering and manufacturing development program.		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 1995

BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604817A Combat Identification								D482	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D482	Ground Combat Identification	24817	18424	30466	17359	10032	10085	9992	9977	Continuing	Continuing

C. Other Program Funding Summary

Work in this program element is related to and fully coordinated with efforts in PE #0602120 (Battlefield Ground Combat Identification Technology) and PE #0603772 (Ground Combat Identification Demonstration).

[illegible]

D. Schedule Profile

<u>D. Schedule Profile</u>									
	FY 1994		FY 1995		FY 1996		FY 1997		
	1	2	3	4	1	2	3	4	1
Conduct Preliminary Design Review	X*								
Conduct Critical Design Review									
Initiate Platform Integration			X*						
Complete Dismounted Computer/Fixed			X*						
Wing/Training Studies									
Initiate Hardware Fabrication/Assmb/Test									
Initiate modeling/simulation effort				X*					
Complete Hardware Fabrication/ Assmb/					X				
Test									
Complete modeling/simulation effort					X				
Exercise option for TF XXI Experiment					X				
Conduct PPQT						X			
Complete platform integration							X		
Conduct LUT								X	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									
BUDGET ACTIVITY		DATE		PROJECT					
5 - Engineering And Manufacturing Development		February 1995		D482					
		PE NUMBER AND TITLE		Combat Identification					
		FY 1994		FY 1995		FY 1996		FY 1997	
		1	2	3	4	1	2	3	4
Initiate FAC effort									
Initiate Enhanced BCIS effort									
Complete TF XXI Experiment									
Complete FAC effort									
Complete Enhanced BCIS effort									
Conduct A-G PDR									
Conduct A-G CDR									
Initiate A-G platform integration efforts									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	PROJECT
BUDGET ACTIVITY	PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development	0604817A Combat Identification				D482
A. Project Cost Breakdown					
	FY 1994	FY 1995	FY 1996	FY 1997	
Primary Hardware Development	13644	8786	19282	7243	
Platform Integration	5965	3792	3350	3888	
System Engineering/Program Management Support					
Government	2592	1291	1280	1264	
Contractor	1812	1473	1454	1014	
Program Management Personnel	804	858	900	950	
Development Test and Evaluation		1850			
Operational Test and Evaluation			1200		
ASCIET			3000	3000	
SBIR/STTR		374			
Total	24817	18424	30466	17359	
B. Budget Acquisition History and Planning Information					
Performing Organizations					
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994
					FY 1994
					FY 1995
					FY 1996
					FY 1997
					Budget to Complete
					Total Program
Product Development Organizations					
TRW	C/CPAF	12 Aug 93	50330	51106	51106
GDLS	SS/CPFF	29 Apr 94	6655	6655	6655
Misc	MIPR	15 Jan 94	6655	6652	6652
TBS (Hardware)	CPAF	2Q97	0	8265	11514
TBS (Integration)	CPFF	2Q97	0	3249	24456
Support and Management Organizations				3688	20768
	MIPR			1964	Continue
CECOM	MIPR			1264	Continue
SBIR/STTR				0	374
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	February 1995	PROJECT
BUDGET ACTIVITY					PE NUMBER AND TITLE							
5 - Engineering And Manufacturing Development					0604817A Combat Identification							D482
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program	
			EAC	EAC								
Test and Evaluation Organizations												
TECOM	MIPR	01 Mar 95			0	0	1850	0	0	2648	4498	
TEXCOM	MIPR	15 Oct 95			0	0	0	1200	0	1766	2966	
All Service	MIPR	1Q 96/97			0	0	0	3000	3000	0	6000	
Combat Identification Evaluation Team (ASCIET)												
Government Furnished Property												
Contract												
Item Description	Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program	
Product Development Property												
Support and Management Property												
Test and Evaluation Property												
Subtotal Product Development												
Subtotal Support and Management												
Subtotal Test and Evaluation												
Total Project					9425	24817	18424	30466	17359		Cont	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE _____

February 1995

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604817A Combat Identification

PROJECT

D356

[illegible]

C. Other Program Funding Summary No related RDTE or other appropriations efforts.

[illegible]

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
Complete platform integration	1	4	4	4
Complete PPQT-OT	X*	3	2	2
Complete Development	X*	X*	1	3

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 1995	PROJECT D356
BUDGET ACTIVITY		PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development		0604817A Combat Identification	
A. Project Cost Breakdown D356:			
Host Platform Integration:	FY 1994	FY 1995	FY 1996
PPQT-OT	1700	0	0
Complete EMD Effort	2400	0	0
Develop and Test IFF Capability (Model 2)	2660	0	0
Total	2050	0	0
	8810		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE									
5 - Engineering And Manufacturing Development		0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development									
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		23976	18694	18769	16960	16801	16625	9992	9977	Continuing	Continuing
DC34 ARMY TACTICAL C2 SYSTEMS (ATCCS) ENGINEERING		13911	10346	10739	8947	8865	8774	9992	9977	Continuing	Continuing
DC36 C31 INTEROPERABILITY TEST SUITE		1871	0	0	0	0	0	0	0	0	1871
D323 COMMON HARDWARE SOFTWARE (CHS)		8194	8348	8030	8013	7936	7851	0	0	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification: The umbrella program to exploit automation technology for the conduct of combat operations is the Army Tactical Command and Control System (ATCCS) program. The ATCCS program provides automation in the five battlefield functional areas (BFAs) with the following specific systems: (1) Maneuver Control System (MCS); (2) Advanced Field Artillery Tactical Data System (AFATDS); (3) All Source Analysis System (ASAS) for Intelligence/Electronic Warfare; (4) Forward Area Air Defense Command, Control and Intelligence System (FAADC2I); and (5) Combat Service Support System (CSSCS) and to other Army Joint and Allied Systems. To provide an overall technically sound, cost effective, and operationally responsive approach, the design and development of ATCCS must be accomplished on a total systems basis. The ATCCS Engineering program provides the required systems engineering to assure integrated Army tactical command and control, and the utilization of common hardware and software throughout the five ATCCS nodal systems. The Command, Control, Communications and Intelligence (C3I) interoperability test bed provides each system developer the capability to conduct system compatibility and interoperability evaluations with other systems without requiring the interfacing systems to be relocated. Each ATCCS life-cycle software engineering center throughout the country is connected via commercial leased lines to each of the other centers to test the interfaces prior to field testing. The Common Hardware Software (CHS) project provides common hardware and software to customers to meet their developmental and fielding needs. The projects in this program element support the ATCCS programs which for the most part are in the engineering and manufacturing development phases of their acquisition strategies and, therefore, they are correctly placed in Budget Activity 5.</p> <p>Project DC34 - Army Tactical C2 Systems (ATCCS) Engineering: The Airland Battle Doctrine requires military leaders to make sound and timely command and control decisions to direct the activities of assigned and supporting units. The umbrella program to exploit automation technology in support of this mission is the Army Tactical Command and Control System (ATCCS) Program. The effort to achieve horizontal integration of the ATCCS battlefield functional areas (BFA), although going on independently in each BFA, was not disciplined enough to address all connections and needs within the entire spectra of communications and control. Therefore, to ensure this horizontal integration effort is complete and automated, a significant management, systems engineering and integration effort is required. This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, Ada software development, interoperability, fielding, and sustainment to assure an interoperable, as well as, affordable ATCCS. The Program Executive Officer Command and Control Systems (PEO CCS) has planned an evolutionary approach to fielding the ATCCS as soon as possible.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	February 1995
5 - Engineering And Manufacturing Development	0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	
FY 1994 Program Accomplishments: <ul style="list-style-type: none"> • Prototyped and demonstrated battalion and below command and control (B2C2) rapid prototype to meet identified B2C2 functions in support of National Training Center Rotation (1000) • Conducted/supported system configuration/operational demonstration and system interface compatibility demonstrations in conjunction with ATCCS III (2700) • Conducted technical interoperability engineering and interoperability lab (2000) • Provided ATCCS interoperability and system level engineering support (2900) • Initiated a tech insertion program for ATCCS, e.g., voice recognition global positioning system (GPS) and terrain evaluation (578) • Updated the command post analysis for notional units to finalize follow-on test evaluations (1000) • ATCCS Testing support (3733) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> • Perform functional analysis and update command post analysis to allow FOTE/fielding (1000) • Establish an ATCCS data architecture and standardization program (800) • Continue the tech insertion program, e.g., large screen displays, plotters, advanced networking, weather tactical decision aids, and interactive electronic pen technology (500) • Provide ATCCS interoperability engineering and system level engineering support (3000) • Produce and test voice recognition system and GPS prototype (700) • Continue B2C2 applications, including brigade/battalion task force and operation plan/operations order, and refine communications interface to include IVIS (672) • Conduct/support system configuration developmental/operational demonstrations in conjunction with MCS V.12 Limited User Test (LUT) (3479) • Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (195) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> • Perform functional analysis and update command post analysis to allow Follow-on Test and Evaluation (FOTE)/fielding (800) • Extend the ATCCS data architecture and standardization program to additional functional areas (1400) • Continue the tech insertion program, e.g., advanced comm protocols, advanced networking, tactical decision aids, and extended interactive electronic pen technology (669) • ATCCS interoperability engineering and system level engineering support (3000) • Perform verification and validation of all BFA fielded software including common and unique applications (1700) • Productize B2C2 applications for embedded applications (800) • Conduct/support system configuration developmental/operational demonstrations in conjunction with MCS Initial Operational Test & Evaluation (IOT&E) and other BFA FOTE's (2370) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development	0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development		
<p>FY 1997 Planned Program:</p> <ul style="list-style-type: none"> • Perform functional analysis and update command post analysis to allow FOTE/fielding (500) • Extend the ATCCS data architecture and standardization program to additional functional areas including a standard data element dictionary (1200) • Continue the tech insertion program, e.g., wireless LANs, high efficiency net radio protocols, and interactive video (547) • ATCCS interoperability engineering and system level engineering support (3700) • Perform dependency analysis and verification and validation of all BFA fielded software including common and unique applications (800) • Perform multi-echelon integration of all command and control applications (800) • Conduct/support system configuration developmental/operational demonstrations in conjunction with BFA FOTE's (1400) <p>Project DC36 - C3I Interoperability Test Suite: The ATCCS C3I Interoperability Test Suite is a collection of equipment and software that collectively represents BFA Central Systems (BFACS) in a pseudo-realistic command post setting. The Suite is linked to other compatible test, experimentation, validation, and demonstration sites (ATCCS Experimentation Site--AES; Total System, Tactical Validation--TSTV; Battle Laboratory--BCCL; Electronic Proving Ground--EPG, etc.) via the Army Interoperability Network (AIN). The Suite provides a capability to do rapid prototyping, intra-Army and joint services compatibility and interoperability (C&I) evaluations, and certification of various message exchange implementations prior to live testing. Furthermore one may conduct rapid cost effective experiments and demonstrations on the ATCCS family of systems as hardware, software and concepts evolve. The activity supports early evaluation of emerging technology in the development of interoperable automated Command and Control (C2) systems, facilitates the smooth transition from the initial to the objective systems and supports evaluation of communication systems and hardware platforms integral to the ATCCS family of systems.</p> <p>FY 1994 Program Accomplishments:</p> <ul style="list-style-type: none"> • Experimentation in support of battlefield functional area (BFA) block/version developments, which include MCS, ASAS, CSSCS, V3.3 & 4, FAADC2 V4 and AFATDS V1 & V2 (450) • Executed follow-on ATCCS logistics maintainability demonstration (LMD) with Standardized Integrated Command Post System (SICPS), common hardware software (CHS), lightweight computer unit (LCU) (200) • Executed ATCCS confidence demonstration to determine the operational and technical readiness of ATCCS to proceed to ATCCS III test and evaluation (950) • Experimentation in support of BFA developments, to include FAADC2 V4 (heavy), CSSCS V4 and AFATDS V2 (165) • Evaluated methods and implementation of common ATCCS support (CASS) V2 into ATCCS and BFA's (106) <p>FY 1995 Planned Program: No planned program in RDTE.</p> <p>Project D323 Common Hardware Software (CHS): The CHS program is the cornerstone upon which the Army must build its integrated efforts for tying together the Army Command and Control Systems. The project provides vehicles (contracts) from which customers can acquire/procure state of the art common hardware/software and</p>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	
associated peripherals to meet their developmental and fielding needs. The project also develops reusable common support software and command post internal structures within shelters. The common software supports many Army, other services and joint systems.		
FY 1994 Program Accomplishments: <ul style="list-style-type: none"> Managed the acquisition and delivery of CHS-1/Lightweight Computer Unit (LCU) equipment in support of customer requirements (767) Executed the Common Hardware, Software Reuse and Standard Integrated Command Post System (SICPS) Programs (6229) Completed Source Selection process and awarded contract for CHS-2 (1198) 		
FY 1995 Planned Program: <ul style="list-style-type: none"> Manage the acquisition and delivery of CHS-1/LCU equipment in support of customer requirements. Perform Source Selection Evaluation for CHS-2 Re-award. Test, accept, and deliver initial CHS-2 hardware and software (1329) Provide SICPS Rigid Wall Shelter (RWS), M1068, 5-Ton and Softtop platforms in support of BFA requirements (1109) Continue execution of the Common Hardware and Software Reuse programs. Support joint and DOD C2 programs (5749) SBIR/STTR (161) 		
FY 1996 Planned Program: <ul style="list-style-type: none"> Continue management of the acquisition and delivery of CHS equipment (LCU/CHS-2) in support of customer requirements (1300) Continue execution of Common Hardware and Common Software Reuse programs (5325) Continue providing SICPS RWS, M1068, 5-Ton and Softtop platforms in support of BFA requirements (600) Support the Army's initiative to digitize the battlefield (805) 		
FY 1997 Planned Program: <ul style="list-style-type: none"> Continue management of the acquisition and delivery of CHS equipment (LCU/CHS-2) in support of customer requirements (1250) Continue execution of Common Hardware and Common Software Reuse programs (5407) Continue providing SICPS RWS, M1068, 5-Ton and Softtop platforms in support of BFA requirements (553) Continue supporting the Army's initiative to digitize the battlefield (803) 		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		February 1995
PE NUMBER AND TITLE		
5 - Engineering And Manufacturing Development		
0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development		
B. Program Change Summary		
Previous President's Budget	FY 1994	FY 1997
Appropriated Value	21992	16991
Adjustments to Appropriated Value	21992	
a. SBIR/STTR decrement (-316)	+1984	
b. HQDA Reprogramming (+2300)		
Current President's Budget	23976	16960
Change Summary Explanation:		
Project DC34:		
Funding: FY94 (+2.3M) provided for ATCCS testing support.		
Schedule: None		
Technical : None		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE				
5 - Engineering And Manufacturing Development		0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development		DC34		
A. Project Cost Breakdown						
System Engineering and Integration Support		FY 1994	FY 1995	FY 1996	FY 1997	
Total		13911	10346	10739	8947	
		13911	*10346	10739	8947	
*SBIR/STTR (195)						
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget to Complete FY 1997
Product Development Organizations						
CSC	PWD				6335	6192
TBD	PWD					
MITRE	MIPR				1025	510
MISC CONTRS	PWD				3214	2784
Matrix-CECOM	MIPR				827	860
Support and Management Organizations: None						
Test and Evaluation Organizations						
OPTEC					1788	
RDA	PWD				522	
Government Furnished Property: None						
Subtotal Product Development					11601	10346
Subtotal Support and Management						8947
Subtotal Test and Evaluation					2310	
Total Project					13911	*10346
*SBIR/STTR (195)						
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development								DC36	
	COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cg. + to Complete	Total Cost
DC36	C31 INTEROPERABILITY TEST SUITE	1871	0	0	0	0	0	0	0	0	1871
<p>C. Other Program Funding Summary: Not Applicable</p> <p>D. Schedule Profile: Not Applicable</p>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT
5 - Engineering And Manufacturing Development		0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development				DC36
A. Project Cost Breakdown						
Interoperability Test Suite Support		FY 1994	FY 1995	FY 1996	FY 1997	
Total		1871	0	0	0	
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or	Method/Type	Award or	Performing	Project	Total	
Government	or Funding	Obligation	Activity	Office	Prior to	
Activity	Vehicle	Date	EAC	EAC	FY 1994	
Product Development Organizations: None					FY 1995	
Support and Management Organizations: None					FY 1996	
Test and Evaluation Organizations					FY 1997	
AES						
Government Furnished Property: None						
Subtotal Product Development						
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project						

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BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE

0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development

**PROJECT
D323**

COST (<i>in Thousands</i>)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D323	COMMON HARDWARE SOFTWARE (CHS)	8194	8348	8030	8013	7936	7851	0	0	Continuing	Continuing

C. Other Program Funding Summary

[illegible]

D. Schedule Profile

	FY 1994	FY 1995	FY 1996	FY 1997
CHS-2 Contract Award	1 2 3	4 1 2 3	4 1 2 3	4
CHS-2 Contract Canceled (Protest)	X*	X*		
CHS-2 Contract Re-Award		X		
CHS-2 Production Delivery V-1 Start			X	
CHS-2 Production Delivery V-2 Start			X	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE
BUDGET ACTIVITY										February 1995
PE NUMBER AND TITLE										
5 - Engineering And Manufacturing Development										
0604820A Radar Development										
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16661	10851	0	0	0	0	0	0	0	141323
DE10 FAAD Ground Based Sensor	16661	5900	0	0	0	0	0	0	0	136372
D21T FAAD C3I Oper Test	0	4951	0	0	0	0	0	0	0	4951
<p>A. Mission Description and Budget Item Justification: The Forward Area Air Defense (FAAD) Ground Based Sensor (GBS) is the key air surveillance and target acquisition/tracking capability for Divisional and Corps FAAD weapons. The GBS consists of a radar-based sensor system with its prime mover/power, Identification Friend or Foe (IFF) and FAAD Command and Control Intelligence (C2I) interfaces. The GBS is an advanced three dimensional battlefield air defense radar which contributes to the digital battlefield by automatically detecting, tracking, classifying, identifying, and reporting targets (rotary wing, unmanned aerial vehicles, cruise missiles, and fixed wing aircraft) to FAAD weapons and forward maneuver forces. These projects are related to an engineering and manufacturing development program for service use that has not yet received approval for full-rate production. They are, therefore, appropriate for Budget Activity 5.</p> <p>Project DE10 - FAAD Ground Based Sensor: The GBS mission is to alert/cue AVENGER, the Bradley Stinger Fighting Vehicle (BSFV) and Man Portable Air Defense System (MANPADS) teams to hostile and unknown aircraft, protect friends from fratricide, and provide air situation data to command and control centers. FAAD GBS performs this mission by providing its air picture data directly to support fire units over Single Channel Ground Air Radio System (SINCARS)/Enhanced Position Location Reporting System (EPLRS) or through the FAAD C2I system. The FAAD GBS is the only planned Army air defense radar that has the range and accuracy performance, plus Electronic Counter Measures and Anti-Radiation Missile resistance, to perform this vital mission within current force structure, throughout the spectrum of conflict in support of light and heavy forces. The FAAD GBS has the ability to expand it's capability to keep current with the evolving threat.</p> <p>FY 1994 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted Development Test I (250) • Conducted In-Process Review (IPR) for advance procurement (40) • Completed development and fabrication of six pre-production sensors and converted one pre-production Antenna Transceiver Group of the Multipurpose Wheeled Vehicle (HMMWV) configuration (9957) • Prepared and updated documentation defined by DODI 5000.2 and conduct pre-milestone activities for Milestone III DAB review (424) • Continued system test to include logistics and maintainability demonstration, and development test with FAAD C3I (1094) • Continued programmatic and technical support (2715) • Concluded integrated logistics development and equipment publications for GBS 5-ton and HMMWV configuration (1179) • Developed of prime mover and power for HMMWV configuration (1002) 										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																									
BUDGET ACTIVITY	PE NUMBER AND TITLE																										
5 - Engineering And Manufacturing Development	0604820A Radar Development	February 1995																									
FY 1995 Planned Program: <ul style="list-style-type: none"> • Contractor Technical Support (320) • Continue programmatic and technical support (3233) • Complete HMMWV Development & Performance Test (2097) • Conduct Milestone III DAB (126) • Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) program (124) <p>Project D2IT - FAAD C3I Oper Test: Project D2IT finances the direct costs of planning and conducting operational testing and evaluation of the Forward Area Air Defense Command, Control, Communications and Intelligence (FAAD C3I) system by the Operational Test and Evaluation Command (OPTEC). The FAAD C3I is an Acquisition Category (ACAT) I system with a dedicated Initial Operational Test and Evaluation (IOTE) in FY 95 in support of a Milestone III full production decision. (In FY 95 and beyond, funding for operational testing of ACAT I systems is programmed with PE funding development for each system. Future fiscal years will be reprogrammed when system information becomes available.) Operational testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical soldiers trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system.</p> <p>FY 1994 Planned Program: Unfunded in FY 1994</p> <p>FY 1995 Planned Program:</p> <ul style="list-style-type: none"> • Conduct FAAD C3I Test Preparation (285) • Conduct FAAD C3I Operational Test (3752) • Conduct Evaluation of FAAD C3I (810) • SBIR/STTR (104) <p>B. Program Change Summary</p> <table> <tr> <td>Previous President's Budget Appropriated Value</td> <td>FY 1994</td> <td>FY 1995</td> <td>FY 1996</td> <td>FY 1997</td> </tr> <tr> <td>Adjustments to Appropriated Value (Total PE)</td> <td>17934</td> <td>10999</td> <td></td> <td></td> </tr> <tr> <td>a. SBIR/STTR (-273)</td> <td>17934</td> <td>10851</td> <td></td> <td></td> </tr> <tr> <td>b. Reprogramming out of PE (-1000)</td> <td>-1273</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Current Budget Submit/President's Budget</td> <td>16661</td> <td>10851</td> <td></td> <td></td> </tr> </table>			Previous President's Budget Appropriated Value	FY 1994	FY 1995	FY 1996	FY 1997	Adjustments to Appropriated Value (Total PE)	17934	10999			a. SBIR/STTR (-273)	17934	10851			b. Reprogramming out of PE (-1000)	-1273				Current Budget Submit/President's Budget	16661	10851		
Previous President's Budget Appropriated Value	FY 1994	FY 1995	FY 1996	FY 1997																							
Adjustments to Appropriated Value (Total PE)	17934	10999																									
a. SBIR/STTR (-273)	17934	10851																									
b. Reprogramming out of PE (-1000)	-1273																										
Current Budget Submit/President's Budget	16661	10851																									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
5 - Engineering And Manufacturing Development		0604820A Radar Development								DE10	
COST (In Thousands)		FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE10	FAAD Ground Based Sensor	16661	5900	0	0	0	0	0	0	0	136372
C. Other Program Funding Summary											
Other Procurement, Army-2		FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
SSN WK 5053		7900	63855	44678	53282	46776	44438	64327	69010	Compl	Cost
Spares BS 9732				2634	4040	5672	5686			continues	continues
D. Schedule Profile											
In-Process Review		FY 1994			FY 1995		FY 1996			FY 1997	
Complete Pre-Production Fabrication		2	3	1	2	4	2	3	1	2	3
Development Test with FAAD C2		1									4
IOTE Complete			X*								
In-Process Review											
Award LRIP Option					X						
Milestone III DAB					X						
FUE Pre-Production					X						
Award 2nd FSP Option							X				
Award 3rd FSP Option									X		
FUE Production										X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995
BUDGET ACTIVITY		PROJECT	
5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE	0604820A Radar Development DE10

<u>A. Project Cost Breakdown</u>						
Contractor Engineering and Manufacturing Support	FY 1994	FY 1995	FY 1996	FY 1997		
Test Support	12138	320				
Engineering Support	1344	2097				
Program Management Support	1228	3359				
SBIR/STTR	1951	124				
Total	16661	5900				
<u>B. Budget Acquisition History and Planning Information</u>						
Performing Organizations						
Contractor or Contract	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997
Government Method/Type Award or Obligation Date	EAC					
Performing Activity Vehicle	Activity					
Product Development Organizations						
Hughes Aircraft C/FFP Feb 92	56836	44378	12138	320		
Company	56836					56836
MICOM MIPR	14709	14709	1136	2821		18666
TECOM MIPR	1068	1068	17	48		1133
Other/Misc MIPR	5178	5178	92	538		5808
Support and Management Organizations						
MICOM MIPR	18438	18438	1687			20125
Other/Misc MIPR	1443	1443	264			1707
SIBR/STTR				124		124
Test and Evaluation Organizations						
OPTEC MIPR	20804	20804	1327	2049		24180
Other/Misc	7793	7793				7793

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995
BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - Engineering And Manufacturing Development		0604820A Radar Development			
Total					
	Prior to				
	FY 1994		FY 1994	FY 1995	FY 1996
	65333	13383	3727		
	19881	1951	124		
	28597	1327	2049		
	113811	16661	5900		
	Subtotal Product Development				
	Subtotal Support and Management				
	Subtotal Test and Evaluation				
	Total Project				
				Budget to	Total
				Complete	Program
					82443
					21956
					31973
					136372

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BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604820A Radar Development

PROJECT

D2IT

[illegible]

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Other Procurement, Army-2										
SSN WK 5053	7900	63855	44678	53282	46776	44438	64327	69010	continues	continues
Spares BS 9732			2634	4040	5672	5686				

	FY 1994		FY 1995		FY 1996		FY 1997	
1	2	3	4	1	4	1	4	1
FAAD C3I Test Preparation								
FAAD C3I Oper Test								
Evaluation C3I Test Results								
Milestone III C3I DAB								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE	February 1995	PROJECT
BUDGET ACTIVITY		PE NUMBER AND TITLE		D2IT		
5 - Engineering And Manufacturing Development		0604820A Radar Development				
A. Project Cost Breakdown						
Test Preparation		FY 1994	FY 1995	FY 1996	FY 1997	
Operational Test			285			
Test Evaluation			3752			
SBIR/STTR			810			
Total			104			
			4951			
B. Budget Acquisition History and Planning Information						
Performing Organizations						
Contractor or	Contract					
Government	Method/Type					
Performing	or Funding					
Activity	Vehicle					
	Award or					
	Obligation					
	Date					
Product Development Organizations: None						
Support and Management Organizations: None						
Test and Evaluation Organizations						
Army Materiel	MIPR					
Test Dir, USA	Oct 94					
Test & Eval Cmd						
SBIR/STTR						
Government Furnished Property: None						
Subtotal Product Development						
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project						

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